

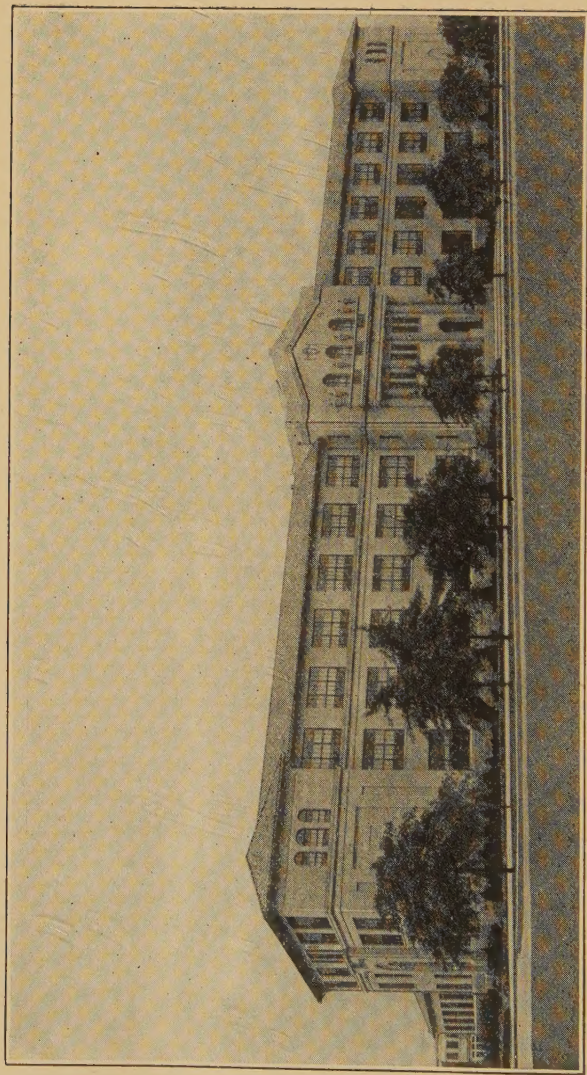
THE JUNIOR HIGH SCHOOL

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THE JUNIOR HIGH SCHOOL

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SECONDARY SCHOOL," "THE HIGH-SCHOOL PRINCIPAL," ETC.

WITH AN INTRODUCTION BY

HENRY SUZZALLO

ENLARGED EDITION



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PREFACE TO THE ENLARGED EDITION

Two considerations have prompted the preparation of the present edition of "The Junior High School." One of these is the generous reception accorded the first edition, which has led the author to feel that a more extended treatment of the various phases of the subject might increase the usefulness of the book. The other is the rapid growth of the movement which, during the six-year period since the appearance of the first edition, has added much to experience and knowledge in the field. The outline of the present work is essentially that followed in the earlier edition. Although the number of chapters has been more than doubled, the sequence of larger topics has been changed but little. The present treatment is in effect more of an enlargement than a revision, although the reader acquainted with the earlier book will meet with occasional shifts of the point of view. Increments of content have been made throughout the entire outline, but are naturally larger where the accumulations through longer experience with a movement are certain to be more manifest; this is in the "features" of the junior high school, such as the curriculum, methods of teaching, the advisory system, and the social organization, rather than in its "peculiar functions," or purposes. The new edition is put forward with the hope that enlargement has made possible a better balanced treatise on junior-high-school reorganization, comparable in this respect with "The Junior-College Movement" and "The American Secondary School." Through these three books the author

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has endeavored to provide a comprehensive basic treatment of American secondary education.

The writer is under heavy obligation to hundreds of teachers, principals, and others who have helped him keep in touch with the junior high school as a working institution. He is, like others interested in the movement, indebted also to investigators and other writers on the subject whose contributions have appeared in books and educational periodicals. To authors and publishers whose materials he has quoted he desires to make special acknowledgment.

LEONARD V. KOOS

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INTRODUCTION TO THE FIRST EDITION

It has been the traditional assumption that public schools are merely educative in function. To be sure this is their originating purpose and will remain their dominant one. But the scientific study of the careers of pupils indicates that the school system inevitably performs certain other functions which have large consequences for the students, inasmuch as they retard, close, lengthen, or determine the particular quality of the school education received.

One of these additional school functions is the protecting, or conserving, function which schools are always tending to exercise in special manner and varying degree. There is not much question that the schools of fifty years ago, with their rigid adherence to a narrow course of study and their continued favoring of those gifted in this restricted curriculum, were inclined to encourage the training of the few and to discourage the education of the many. In the present school system a far more democratic impetus is at work. More attention is being given to varied types of mind. Those who suffer physical and mental handicaps are given the merciful attention of medical inspectors, school nurses, school clinics, and special classes with a regimen of their own. For the most part, these modern adjustments are the outcome of an aspiration to equalize educational opportunities. Their result is a longer period of schooling than would have been the privilege of most unfortunate children several decades ago.

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There is another school function which is the outcome of a quite different aspiration, namely, the desire of the teaching profession to be economical and efficient in the service it renders the individual and society. In the older and more traditional schools it expressed itself in the selection and rejection of students, the standards of such continuous discrimination being on the whole narrow rather than broad. Recent statistical studies of school careers have indicated such an unanticipated rate of retardation and consequent elimination that attention has been focused critically on the organization and method of the existing school system. In turn thoughtful educationists have proceeded to constructive experiments devised to hold children in school. Individual instruction, multiple courses, and elective studies, departmental teaching, promotion by subjects, vocational and prevocational classes, educational and vocational guidance, and other modern innovations have been in considerable degree developed out of the attempt to lengthen school careers through better adjustments to individual differences. In so far as this motive has established itself as a working reform in the schools, it has transmuted the older and more or less subconscious function of selection and rejection of students into the contemporaneous and quite conscious policy of distributing school attendants more effectively within the complex ramifications of the modern school system. Thus whatever ability and interest the child or youth has is given a more congenial activity through which to be expressed, and the student's career is prolonged. This distributive function of the school operates within the school as educational guidance and across the gap between school and working life as vocational guidance and placement.

The professional recognition of these conserving and

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distributing functions of the public-school system and the perception of their tremendous influence on the quality and quantity of the educational service rendered by the school to youth have been responsible for much of the current educational reconstruction. For this reason it is well to have in mind the multiple functions of the public-school system before beginning the study of a particular group of educational readjustments such as are involved in the junior-high-school movement. They are mentioned here so as to give a background to the specific interpretations of this particular educational reorganization.

It is not at all accidental that the teaching profession should at the present time be deeply engrossed with the junior-high-school problem. There is adequate reason for such interest. Attention usually focuses on the most troublesome group of problems. It is precisely because the now obvious maladjustments seem to be more numerous and important in and about the close of the elementary-school years and the first years of high school, that the effort at reconstruction has been most pronounced at this point in the school system. In consequence the analysis of the junior-high-school movement offers one of the most significant views of current educational thought and practice.

It is quite important for the profession to know in an accurate way the exact status of this movement. Many claims have been made for the junior high school. We must know which are justified. Many new devices of administration have been proposed and tried. We must learn which are expedient or successful. The unsolved problems must be indicated, that additional experiments may be conducted in an economical way and the whole development of the junior high school hastened in the direction of sure results.

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The author of the volume here presented serves our needs with a treatment which is scientific in spirit and method. He offers us the strict fact of experience. He summarizes the success, failure, and uncertainty of our experiments to date. His study is a valuable contribution to the next stage in progress, because its method is not the optimistic expression of doctrine and intent but the unprejudiced analysis of practice and result.

HENRY SUZZALLO

SEATTLE, WASHINGTON

THE JUNIOR HIGH SCHOOL

I

THE MOVEMENT FOR REORGANIZATION

THE FACTORS OF THE MOVEMENT

Many forces, not one or a few only, are responsible for the movement for educational reorganization finding expression in the present widespread establishment of "junior high schools" or "intermediate schools." Perhaps first in point of time has been the appreciation on the part of some of our educational leaders that, as compared with certain European school systems, for the children in our schools entrance upon the period of secondary education is too long delayed. We have been told that there is a waste of time in our system. The unfavorable position given American schools in these comparisons has had no little to do with the current dissatisfaction with the conventional relationship between our elementary and secondary schools.

A second factor must be the statistical studies showing the high rate of pupil mortality beginning at about the sixth grade and continuing unabated through the earlier years of the four-year high school. During a long period we had been taking a smug satisfaction in what we regarded as the equality of educational opportunity afforded by our system. It hurt our pride to learn that the facts did not

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square with our boasting. Those directing our schools could hardly do otherwise than cast about for the means of achieving the educational democracy we had failed to attain.

Upon the heels of these disconcerting data and doubtless in some part discovered in an effort to learn the causes of elimination, came facts touching the wide variation in capacity, interests, and needs of children in and out of school. A consideration of these differences brought a consciousness of the impossibility of adequately recognizing them in the conventional school. As the problem of recognizing these variations grew more acute in the grades commonly associated with the junior high school, it was but natural that efforts at reform should focus upon them.

An additional factor, more recently emphasized, but implicit in the second and third just described, which preceded it in time of arrival, is the consciousness that the work of distributing young people to occupational life and to opportunities for further training is being bunglingly done. Both school authorities and laymen are rapidly developing an awareness of the need for a more effective program of guidance, the need being most imperative in the school years when mortality is greatest and when the youth are beginning to fix on their lines of specialization.

Another force, perhaps even more influential than any of those already mentioned, may be set down here: the increasing appreciation of the fact that during the later years of the common school most children are undergoing changes in the nature of a rapid approach to adulthood, changes which make unsuited for them many of the features of that school. Among these incompatible features are the complete disciplinary dominance of the one-teacher regimen and the repetition and extension of the materials and methods of the "common branches" at a time when the child needs to be engaged by new interests.

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Besides the forces mentioned and others which will occur to the reader as legitimate, we may point out certain forces which have had much to do with hastening the present status of reorganization and which are actually extraneous to the more strictly educational requirements of the situation. Here may be mentioned the solution of a knotty local building problem which is made possible by instituting the junior-high-school plan. For instance, the four-year high-school building in a system becomes overcrowded. To build new and larger accommodations seems to the administrative authorities impossible. By removing the pupils of the ninth grade from the high-school building and housing them with those in the seventh and eighth grades in some older buildings, the problem is solved. This easy emancipation from a housing difficulty has sometimes been the primary cause of a superficial reorganization; it has also sometimes been used to effect genuine reorganization where otherwise there might have been too great opposition to a change for which the populace was not yet prepared.

A second factor of the broad sweep of the movement for reorganization extrinsic to educational needs and one which is more influential than that just indicated is the desire of school authorities to be "progressive." This factor is not unlike the force of a fad. It often operates without any clear understanding of the purposes of reorganization and it not uncommonly results in change which, rather than being fundamental, restricts itself to such a superficiality as the mere regrouping of grades.

REORGANIZATION FORESHADOWED

The consciousness of a need for reform in the grades now associated with the junior high school is not new. It has been with us for more than a quarter of a century. As early as 1893 the widely influential Report of the Committee

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of Ten on Secondary School Studies made recommendations in considerable part foreshadowing present-day reorganization. The chief emphasis of the report, of course, bore upon readjustment within the conventional four-year high school, but in the light of his earlier pronouncements, it was scarcely to be expected that a committee working under the leadership of Charles W. Eliot would ignore the problem of the relationship of this organization to the grades below the high school. For some years he had been urging the "shortening and enrichment of school programs." In harmony with this is a statement in the Report of the Committee of Ten where comment is made upon the programs of study proposed :

In preparing these programs, the committee were perfectly aware that it is impossible to make a satisfactory secondary-school program, limited to a period of four years, and founded on the present elementary-school subjects and methods. In the opinion of the committee, several subjects now reserved for high schools — such as algebra, geometry, natural science, and foreign languages — should be begun earlier than now, and therefore within the schools classified as elementary ; or, as an alternative, the secondary-school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary-school period.

Consonant with this comment are the recommendations of each of the conferences of specialists whose reports the Committee of Ten had before them when the report from which quotation has just been made was in preparation. The Conference on Latin urged the introduction of that subject into the grades below the ninth, and that on Modern Languages recommended similarly the introduction of elective work in German and French. The Conference on Mathematics asked for the continuation of the usual eight years of arithmetic, but spoke also for a place

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for concrete geometry and for algebraic expressions and symbols and simple equations. The conferences in the sciences urged some recognition of their fields in elementary grades. Each of the remaining conferences made recommendations that called for more or less reorganization of elementary-school curricula in the general direction of a more extended recognition of its subject.

If we may judge from those portions of the Report of the Committee on College Entrance Requirements¹ touching reorganization, the six years following the appearance of the Report of the Committee of Ten did much to emphasize the demand for reform in the grades immediately below the ninth. In one of its resolutions this committee took a stand in favor of a "unified six-year high-school course of study beginning with the seventh grade." A number of considerations were arrayed in support of this proposal. They found that educators agreed that the work of the seventh and eighth grades "must be enriched by eliminating nonessentials and adding new subjects formerly taught only in the high school." It was their belief that these reforms were to be more quickly effected by making these grades a part of the high school. They contended that "the seventh grade, rather than the ninth, is the natural turning point in the child's life, as the age of adolescence demands new methods and wiser direction." They were aware of the high student mortality due to the fundamental differences of organization in the elementary school and in the high school, and they expressed the opinion that the transition from one to the other "might be made more natural and easy by changing gradually from the one-teacher regimen to the system of special teachers, thus avoiding the violent shock now commonly felt on entering the high school." They, like the Committee of Ten, made

¹ Appearing in 1899.

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specific recommendations looking to the introduction of secondary-school subjects in seventh and eighth grades.

. It would not be difficult to find numerous further evidences of the growing consciousness of the need of effecting reorganization in the grades with which we are here concerned. We shall refer to one more report only, a report made in 1913 by the Committee on the Economy of Time in Education, almost a decade and a half subsequent to the appearance of the Report of the Committee on College Entrance Requirements. From the name it bore one is led to expect this committee to renew the emphases of the two committees already referred to. And this they did. But as this committee deliberated during a period not remote from our own time, they did not rest with a mere reiteration of formulas which had by the time of the making of their report become commonplace. Instead, they carried forward the torch of educational reorganization. Doubtless the advances made by them over the preceding reports were augmented by the assurance provided in the experimentations in reorganization which had in the meantime been begun. Without attempting to give a complete outline of the additions made by this committee to the thought on reorganization, it may be said that its report is the first to recommend the separation on horizontal lines, into two divisions, of the proposed six-year secondary-school period. One of the members in his individual report indorsed the sort of reorganization which was at the time of the preparation of the report finding place in a number of school systems — "(1) a junior high school of three years extending from the twelfth to the fifteenth year [of age]; and (2) a senior high school, also of three years, covering the period from the fifteenth to the eighteenth year." "A three-year junior high school," said this member, "will assure a larger number of citizens possessing some cultural

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training of secondary-school grade than a six-year high school." Further evidence of this enhanced conception of economy through reorganization is to be found in the recommendation of the provision of "vocational lines of work beginning at [the ages of] twelve, fifteen or sixteen, eighteen, and twenty." At the beginning of the seventh grade, pupils "are already discovering the personal interests and limitations which point toward specific types of training and life work." Reorganization, through shortening the period of elementary and general education, "provides for a large number who will enter vocations at sixteen. . . ." Heretofore the economy desired was largely in the interests of those who will enter the professions. This offering of "practical studies" would have the additional advantage of retaining in school many who would otherwise drop out early. Through this retention and through the possibility in the junior high school of putting a larger proportion of the population in possession of some cultural training of secondary-school grade, we should be making strides toward democratizing the school system.

The contrast of this conception of the reorganization that should be effected with that to be found in the Report of the Committee of Ten made twenty years earlier is so patent as not to require elaboration. In conjunction with the statements of the intervening Committee on College Entrance Requirements it is unmistakable testimony of the increasing clarification of thought concerning reorganization of secondary education during those two decades. At the same time, the similarities of statement and the sequence of ideas are evidence that the widespread movement for reorganization in which we find ourselves today is not the impulse of a moment, the unpedigreed offspring of irresponsible faddists, but the expression of a body of convictions that have been adding strength with years.

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THE EXTENT AND VARIETY OF THE MOVEMENT

Such forces as those named in the opening paragraphs of this chapter, to the influence of which has been added the momentum of the history of the movement just epitomized, are responsible for the vast array of phenomena of reorganization with which we are now surrounded. The handful of reorganizations that had been effected by 1910 and to which were applied the terms "junior high school" and "intermediate school" has been multiplied until they are now numbered by thousands. Data made available by the United States Bureau of Education show that in 1925 there were 2548 "non-four-year" high schools, these including as predominant types 879 "segregated" junior high schools and 1389 "junior-senior" high schools (housing both junior and senior units).¹ Numerous other communities are giving serious consideration to the proposal to effect immediate or early reorganization. Millions have been and are being voted and spent by some of these cities for buildings for properly housing the new institution.

While referring to the growth in numbers of junior high schools it is pertinent to mention their status in larger cities. Two investigators, Pratt² and Glass,³ have in recent years ascertained this status for cities with populations of 100,000 and over. The latter states: ⁴

Thirty-five [of 68 cities with populations of this size] report junior high schools in operation. Nine additional cities report junior high schools under construction. Four additional cities

¹ The Junior-High-School Curriculum, Fifth Yearbook of the Department of Superintendence (1927), pp. 27-30.

² Orville C. Pratt, "Status of the Junior High School in Larger Cities," *School Review* (November, 1922), Vol. XXX, pp. 663-670.

³ James M. Glass, "Present Status of the Junior High School in Cities of More than 100,000 Population," *School Review* (October, 1924), Vol. XXXII, pp. 598-602.

⁴ *Ibid.* p. 598.

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report junior high schools authorized. Thus, 48, or 75 per cent, of the [64] cities replying report junior-high schools in operation, under construction, or authorized. Two additional cities report the adoption of the junior-high-school plan of organization, and one city reports that adoption is favorably considered, making 51 cities (80 per cent) that have taken positive or favorable action with regard to the junior high school. Ten cities report no junior high schools, and three report decisions not to adopt, making thirteen cities (20 per cent) that have taken either no action or negative action.

Of course, large proportions of small cities have also effected junior-high-school reorganization.

Other evidences of the progress of the movement run along many lines. Junior-high-school textbooks in a number of subjects have long been on the market. Hardly an educational convention meets which does not give the discussion of the problems of this new school a prominent place on its programs. Educational periodicals devote much space to articles on the junior high school. Departments of education in colleges and universities are offering courses concerned exclusively with its problems and these and other training institutions claim to be preparing teachers for it. State legislatures are enacting laws to authorize its establishment or to regulate its operation. These are some of the evidences that the junior high school is not only one of our most engrossing educational concerns, but must be reckoned with as a permanent, even though modifiable, feature of our school system.

Moreover, as is to be expected when such a new institution is under consideration, the extent of interest in the reorganization is hardly more protean than are the conceptions and forms of reorganization themselves. Although opinion and practice are moving gradually toward homogeneity, the variety of purposes and their combinations espoused by advocates of the junior high school are almost

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numberless and there is much disagreement among them. The forms the institution takes are likewise multifarious. In only two respects do the administrative features approach identity, and these are in the mode of assignment of work to teachers (departmentalization or semi-departmentalization) and in the manner of advancement of pupils (promotion by subject). Sometimes it includes seventh and eighth grades; sometimes seventh, eighth, and ninth; sometimes only a single grade; and, again, as many as four grades. Curricula for junior high schools take a wide variety of forms and represent several types. Standards in the selection of teachers vary greatly from community to community. Admission requirements, methods, advisory systems, disciplinary and social organization, and buildings and equipment range through variation upon variation. In fact, the junior high school is hardly the same thing in any two communities.

THE SCOPE OF THIS BOOK

While this extent of dissimilarity should meet with approval during the earlier experimental stages of an institution, the junior high school has by now been with us long enough to urge us to take stock of its functions and of the features of organization by means of which these functions are to be performed. Certainly, if there is anything fundamental and permanent in all this experimentation,—as most of those who are in touch with the movement believe there is,—we should now be in a position to come nearer defining it than current opinion and practice have thus far given evidence of doing. It is the purpose of this volume to contribute to the clarification of thought which is imperative in this chaotic situation. Toward this end effort is first made to establish out of current educational thought,

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and by the assistance of such findings of educational science as are available, a tentative working statement of the peculiar purposes of this new institution. This is done in the two chapters immediately following. But it is not enough to establish the purposes of an educational unit. The means of achieving them, that is, the features of reorganization, must also be considered. To this task all the remaining chapters but one (the last in the book) are devoted, dealing in turn with the grades to be included, admission requirements, the program of studies, the subjects of study, methods of adapting the work to differences in pupils, departmentalization, promotion, methods of teaching, the advisory system, the social organization, the staff, and the housing and equipment. Dealing as it does both with the purposes of the junior high school and with the means used in attaining them, this book purports to be a brief yet comprehensive treatise on this unit in the school system.

QUESTIONS AND PROBLEMS

1. Trace for some state of your acquaintance the history of the junior-high-school movement.

2. What is the present status of the junior high school in this state?

3. Note the personnel of the Committee of Ten on Secondary School Studies and of the subcommittees on the subjects of instruction (see reference below) and draw a conclusion as to why they were willing to economize time at the expense of the elementary school.

4. Read the reports of the Committee of Ten on Secondary School Studies and of the Committee on the Economy of Time, with a view to noting all elements of the junior-high-school idea advanced. Prepare a chart to bring out the differences in this respect in the two reports.

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5. Why should there be such wide variation in the make-up of junior high schools at the present time as was reported in this chapter? Is this situation likely to change?

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- The Junior-High-School Curriculum, chap. ii ("The Extent and Growth of the Junior-High-School Movement"). Fifth Yearbook of the Department of Superintendence, 1927.

II

THE PECULIAR FUNCTIONS OF THE JUNIOR HIGH SCHOOL

THE FUNCTIONS OF EDUCATION

It is platitudinous in the extreme to say that the final test of an educational institution is the extent to which it realizes the aims of education. While the statements of "ultimate" aims extant in the educational world are numberless and protean, the nature of many recent expressions is fairly well exemplified in the statement of "main objectives" made by the Commission on the Reorganization of Secondary Education of the National Education Association.¹ For our uses this statement is somewhat more appropriate than any other, since it is not the conception of ultimate aims held by an individual but one which has had the indorsement of a group of educational leaders. It may be said, therefore, to be more representative of current thought and more nearly authoritative. This committee regards the following as the main objectives of education: (1) health, (2) command of the fundamental processes, (3) worthy home membership, (4) vocation, (5) citizenship, (6) worthy use of leisure, and (7) ethical character. As the import of each of these categories is readily apparent, it is unnecessary to amplify. Because the third, fifth, and seventh of these objectives may, with little doubt, be comprehended by the term

¹ Cardinal Principles of Secondary Education, *United States Bureau of Education Bulletin No. 35*, 1918.

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"civic-social" when broadly conceived, these seven objectives will, for convenience in subsequent discussion, be reduced to five.

The fulfillment of these aims, then, being the rôle of education, it is the function of the institution upon which we are focusing attention in this volume, the junior high school, to make its contribution to the achievement of this end. It must assist in the realization of the physical, the vocational, the civic-social, and the avocational aims — the ultimate aims of education. Its relation to the realization of the aim of training in the command of the fundamental processes, the "tools of intelligence and culture" — more a proximate than an ultimate aim — may be inferred from the following quotation from the report of the commission to which reference has already been made:¹

Much of the energy of the elementary school is properly devoted to teaching certain fundamental processes, such as reading, writing, arithmetical computations, and the elements of oral and written expression. The facility that a child of twelve or fourteen may acquire in the use of these tools is not sufficient for the needs of modern life. This is particularly true of the mother tongue.

Thus, in addition to doing its share in realizing the four ultimate aims, the junior high school will continue the training in the use of the tools of education begun in the elementary school.

The present writer has elsewhere essayed a formulation of aims of secondary education, basing it on an analysis of purposes proposed by twenty-five leaders and groups of leaders in the field.² There also four major aims were set up, these being designated as (1) civic-social-moral

¹ Cardinal Principles of Secondary Education, *United States Bureau of Education Bulletin No. 35* (1918), p. 11.

² Leonard V. Koos, *The American Secondary School*, chap. iv. Ginn and Company, 1927.

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responsibility, (2) physical efficiency, (3) recreational and æsthetic participation and appreciation, and (4) occupational efficiency. It is interesting to note the large degree of concurrence of this formulation with the four aims (exclusive of "command of the fundamental processes") to which those proposed by the Commission on the Reorganization of Secondary Education may be simmered down.

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But an examination of the literature on the junior high school shows that its friends insist that this institution is designed to facilitate the realization of these educational objectives to an extent impossible through the traditional organization. They write of certain "advantages" or "aims" of, or "arguments" for the junior high school which, in so far as they are acceptable or justifiable, may be thought of as its *peculiar functions*, and will hereafter be so designated.

There are presented at this point the results of a canvass of a large amount of literature dealing with the junior high school — a canvass made with the aim of discovering what are more commonly posited as the functions peculiar to this form of reorganization. For the purposes of the canvass the literature examined was divided into two classes, (1) public school documents, such as city school reports, pamphlets issued by the school authorities in description of junior high schools established in their communities, and other similar materials, usually prepared by the superintendent or principal, and (2) statements of the aims, advantages, or functions of the junior high schools by other educational leaders. The latter group of statements appeared in articles or editorials in educational periodicals, educational books, or reports of

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school surveys. The documents prepared by the local school authorities and intended primarily for local consumption were assembled by means of a circular letter directed to the superintendents of almost two hundred systems which have been reported as having introduced the junior high school or the 6-6 organization, asking for copies of any printed materials that may have been issued touching the reorganization effected. Matter of the sort called for came from about seventy systems. In the materials from thirty were included what seem to have been intended as more or less complete statements of the "reasons" or "grounds" for, or "advantages" of such reorganization as was being effected. The statements in the other group have usually been prepared for a larger audience, although they include three statements appearing in reports of educational surveys which have been intended primarily for local consumption. For the most part they are statements made by men of more than local, sometimes even national, prominence in education.

In exploring Table I and Fig. 1, which present the findings of the canvass just described, for such significance as they may have, the reader should bear in mind that the task of classification sometimes presented baffling problems and that, therefore, in a small proportion of instances, it is not unlikely that a misconstruction has been placed upon the words, and their original meaning in some part perverted. There is a greater possibility of such misconstruction under Function I and its subfunctions than for any other, inasmuch as the writers did not always mention progress toward realizing a democratic school system when urging one or more of these subfunctions. There is, however, considerable assurance of the approximate accuracy of the percentages for these five subfunctions, as well as for the ten remaining functions.

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TABLE I. FREQUENCY OF APPEARANCE OF PECULIAR FUNCTIONS PROPOSED IN EDUCATIONAL LITERATURE FOR THE JUNIOR HIGH SCHOOL

PECULIAR FUNCTIONS OF THE JUNIOR HIGH SCHOOL	IN STATEMENTS IN SCHOOL DOCUMENTS		IN STATEMENTS BY EDUCATIONAL LEADERS	
	Number	Per Cent	Number	Per Cent
I. Realizing a democratic school system through				
A. Retention of pupils	22	73.3	18	90.0
B. Economy of time	19	63.3	17	85.0
C. Recognition of individual differences	16	53.3	19	95.0
D. Exploration and guidance	12	40.0	15	75.0
E. Beginnings of vocational education	12	40.0	14	70.0
II. Recognizing the nature of the child at adolescence .	11	36.7	11	55.0
III. Providing the conditions for better teaching	14	46.7	17	85.0
IV. Securing better scholarship .	6	20.0	7	35.0
V. Improving the disciplinary situation and socializing opportunities	14	46.7	14	70.0
VI. Effecting financial economy	6	20.0	2	10.0
VII. Relieving the building situation	6	20.0	1	5.0
VIII. Continuing the influence of the home	2	6.7		
IX. Hastening reform in grades above and below	1	3.3	2	10.0
X. Normalizing the size of classes	1	3.3	2	10.0
XI. Relieving teachers			2	10.0

In both table and chart the functions have been listed as far as possible in the order of their frequency of appearance. This order has been somewhat disturbed by the exigencies of the endeavor in some measure to recognize logical relationships. Nevertheless, it may be seen that Functions I to V (inclusive of subfunctions A, B, C, D,

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and *E*) are recognized in large proportions of statements, while the remainder have been less generally listed in the statements used.

The import of the functions as tabulated to the writers of the statements used will be shown by quotation of typical expressions to be found in those statements. The quotations will be followed in each case by a brief examination of the validity of the claims of the function to acceptance in a working list of legitimate peculiar functions of the junior high school.

RETENTION OF PUPILS

The nature of the claims made. Since the first function, the *realization of a democratic school system*, must find its meaning in the subfunctions *A, B, C, D, and E*, they will be discussed in the order given. Examples of the statements classified under *retention of pupils* are: the junior high school aims "to reduce to a minimum the elimination of pupils," "to facilitate the continuation of every child's education," "to keep a larger number of pupils in school for another year," "to bridge the gap" between the eighth and ninth grades in the traditional organization, or "to render smoother the transition" from elementary to secondary education.

The fact of elimination from school. These quotations acknowledge wide recognition of an astounding pupil mortality from the fifth and sixth grades upward in the system, a mortality brought to light in many investigations. Inglis¹ assembled the findings of three of these investigations, those of Thorndike, Ayres, and Strayer, on a comparable basis and showed clearly that, although the proportionate elimination is large between any two successive grades

¹ Alexander J. Inglis, *Principles of Secondary Education*, pp. 128 ff.

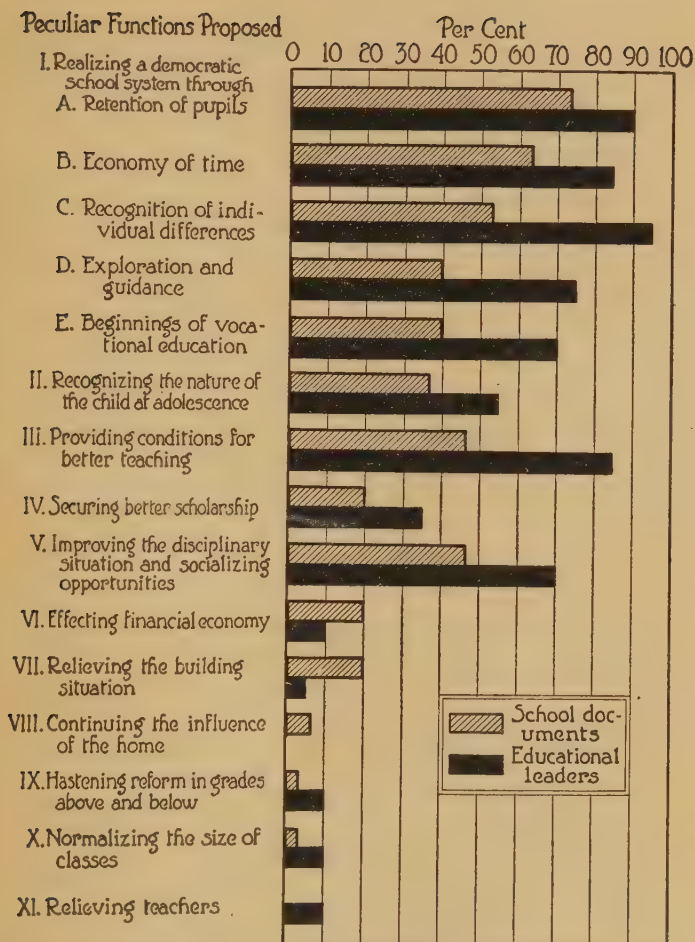


FIG. 1. Percentages of statements in school documents and of educational leaders mentioning certain peculiar functions of the junior high school. (From Table I)

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above the fifth, in terms of the percentage of those in each grade who do not enter the succeeding grade, it is greatest between the ninth and the tenth. As concerns all the six grades which it is now generally advocated should be included in the period of secondary education, the next largest proportionate mortality is between the eighth and ninth and between the seventh and eighth grades. The mortality between the grades above the ninth is relatively inconsiderable.

Studies of the distribution of enrollment in the four years of the traditional high school also call attention to the sudden decrease between the ninth and tenth grades. Thus, Counts's figures for the distribution of students in the accredited high schools of the North Central Association show a much larger gross as well as proportionate elimination between the first and second years of the high school than between succeeding years.¹ Data for public high schools of the country as a whole disclose a somewhat similar situation. This is shown in Fig. 2, in which the enrollments in the second, third, and fourth years of the four-year high-school period are represented as percentages of the enrollment in the first year. The figure sets forth these percentages for three school years, namely, 1909-1910, 1919-1920, and 1923-1924. Although proportionate retention increased during each of the two intervals, that is, from 1909-1910 to 1919-1920 and from 1919-1920 to 1923-1924, the largest gross loss of pupils was still to be found between the first and second years, with slackening losses between the second and third and between the third and fourth years. It is to be noted, to be sure, that this is not all elimination, since there must be

¹ George S. Counts, *Approved High Schools of the North Central Association of Colleges and Secondary Schools*, *United States Bureau of Education Bulletin No. 6* (1915), pp. 36 ff.

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some failure to advance (retardation) from year to year. Moreover, the elimination is slightly accentuated by the existence of a small proportion of schools in rural territory offering but one, two, or three years of work. But the

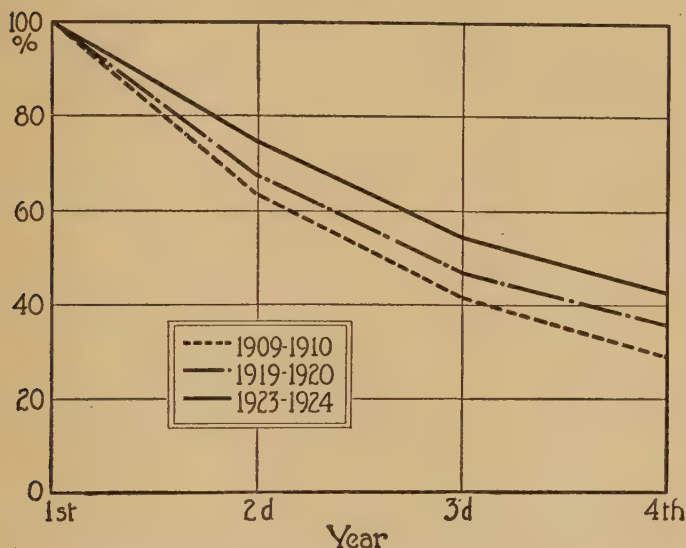


FIG. 2. Percentages, for 1909-1910, 1919-1920, and 1923-1924, which pupils enrolled in the second, third, and fourth years of high schools in the United States were of the first-year enrollments. (Computed from data appearing in Table 2 of the *United States Bureau of Education Bulletin No. 40* (1925))

largest gross elimination is unequivocally in the first year or before the opening of the second high-school year.

If it should be suggested that this large gross and proportionate elimination during the first high-school year and before the second year is accentuated by the fact that some states have compulsory education laws operative up to the sixteenth year of age, which normally carries the

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pupil through but not far beyond his first high-school year, it may be answered that in not many instances do such laws apply after completion of the eighth grade.¹

While no careful thinker will ignore the enormous influence, upon this elimination, of factors that lie outside the school, there can be no question that our typical organization of education is in considerable part to be held accountable for it. It is a truism to assert that there is much that is inherent in the organization of the upper grades of the elementary school not calculated to conduce to longevity of the educational career. The traditional grouping of grades into eight years of elementary-school work and four years of secondary-school work is itself an encouragement of termination of school life at the close of the former period. But the "gap" or "break" in internal organization exceeds that of this external grouping in its influence upon pupil mortality. The factors in the latter making for elimination may be illustrated by the changes in curricular materials from the elementary school to the secondary school, the one-teacher regimen of the former as contrasted with the departmentalization in the latter, and the complete disciplinary control in the former as compared with the larger freedom of behavior in the latter.

From facts like those cited it is apparent that, as concerns holding in school a larger proportion of the school population for a longer period through reorganization, attention to reform may well be focused upon the grades more commonly included in the junior high school, namely, the seventh, eighth, and ninth. This statement, however, in no sense implies an absence of need of reform in grades above and below those named.

¹ This conclusion is based on Oliver L. Troxel's "State Control of Secondary Education," a doctor's thesis on file in the Graduate School of the University of Minnesota (1926).

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Studies of improved retention by means of reorganization.

When we examine the factual evidence mustered in support of the junior high school aiming to show the large extent to which this function of retaining pupils is already being performed, we find some material but, because of the complexity of factors involved and of the procedures of investigation that would be necessary to establish improved retention, very little that can endure the light of careful thought. Many superintendents and principals have arrayed statistics purporting to show the increased holding power of the reorganized school, but almost all have left out of account the fact that, without reorganization along the lines here implicit, the upper grades and the high school have been drawing and holding larger proportions of the possible school population. From computations from data published by the United States Bureau of Education the present writer has shown elsewhere¹ that the pupils in public secondary schools increased in the thirty years from 1890 to 1920 from 3.8 to 24.0 per cent of the population of the ages normal for children in the four high-school grades; that is, from fourteen to seventeen years of age inclusive. The percentage in 1920 is thus seen to be more than six times as large as that in 1890. This has come about without reorganization along the lines under discussion in any determinative proportion of communities having high schools. This fact must in large measure discredit the claims that an increase in proportionate enrollment in the upper half of the public school system may be attributable entirely to the establishment of junior high schools. Improved economic conditions, social agencies, and other forces outside the schools have encouraged many to extend their periods of schooling.

¹Leonard V. Koos, *The American Secondary School*, chap. i. Ginn and Company, 1927.

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1. A similar qualification must be placed upon the figures presented by Douglass,¹ who compared the percentages of retention in junior and senior high schools in 1915 with those found under the traditional organization six to eight years earlier by Ayres and Thorndike. A full reading of Douglass's report, however, shows that he was not unaware of the fallacy in the comparison.

2. Moreover, the data presented by Stetson² for Grand Rapids are not likely to be accepted without question, although one is moved to concede that some part of the rapidly increasing enrollment in the junior-high-school grades, especially of boys, may be ascribed to the influence of reorganization.

3. Childs has made one of the most dependable investigations³ of the holding power of the junior high school which has so far appeared. He computed for cities of various populations the percentage which the enrollment in the seventh, eighth, and ninth grades was of the enrollment of the first six grades. This computation was made for cities in which the junior high school had been established, and also for cities in which departmentalization only had been introduced. The percentages tended to be somewhat greater for junior high schools than for departmental organizations in cities of less than 20,000 population. The advantage was reversed in cities of a population of 20,000 and over and also when comparison is made of the percentages which the enrollments in the tenth, eleventh, and twelfth grades are of the first six grades. By a comparison

¹ A. A. Douglass, "The Junior High School," Fifteenth Yearbook of the National Society for the Study of Education (1916), Part III, pp. 101-109.

² P. C. Stetson, "A Statistical Study of the Junior High School from the Point of View of Enrollment," *School Review* (April, 1918), Vol. XXVI, pp. 233-245.

³ H. G. Childs, *An Investigation of Certain Phases of the Reorganization Movement in the Grammar Grades of Indiana Public Schools*, pp. 137-174.

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of the increases between 1907-1908 and 1912-1913 of "progress retention" through six half-years of high-sixth-grade pupils in both these types of reorganization, he found that the advantage was somewhat in favor of the departmentalized plan. In the later comparison, when boys alone were considered, the junior-high-school plan was rather strikingly superior.

A number of considerations detract from the feeling of finality given by the findings of Childs's study. One of the most significant of these is the failure of the investigator to set up a "standard" junior high school for the purposes of his comparisons. He classified the institutions for which data were supplied as junior high schools, departmental organizations, or non-departmental schools "on the basis of their own claims."¹ In the present chaos of conceptions of what constitutes a junior high school there can be little doubt that many of the schools claiming to be such are hardly more than departmentalizations or semi-departmentalizations. Evidences of this approximation of many self-styled junior high schools to mere departmentalizations is to be found in the data on the features of reorganization supplied elsewhere in the report. Again, the writer does not believe that, even in the few instances of rather thoroughgoing reorganization, a large increase of enrollment will immediately follow on account of reorganization per se; it is still too early to test the holding power of most of our junior high schools. Lastly, a convincing comparison should also be based upon data from a larger number of systems than is sometimes used, including a more extended use of data from non-departmentalized schools.

4. The last investigation of retention of pupils through junior-high-school reorganization to be drawn upon illus-

¹ Ibid. p. 10.

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tratively here is one by Powers.¹ In his study Powers endeavored to control some of the factors making for variability which had been left out of account by previous investigators. His data were obtained from junior and non-junior schools enrolling pupils in Grades VII, VIII, and IX in the Minneapolis system, where, at the time of gathering these data during the process of shifting to junior-high-school reorganization, there were schools operating on both plans. The compulsory education law in force, with certain exceptions, required attendance in school up to the sixteenth birthday. At this time, as administered by the attendance department of the system, there were ten reportable causes for leaving school which were classifiable, for the purposes of Powers's study, into two groups, (1) seven "non-school-leaving" causes, that is, those over which the school may be considered as having no direct influence, such as leaving the city, excuse (for illness, etc.), or death; and (2) "school-leaving" causes, three in number, namely, issuance of employment certificate, engagement in home pursuit, and being over the compulsory age of sixteen years. According to Powers, pupils leaving school for either of these three causes constitute the only pupils over whom the school may exercise any sort of retaining power. These pupils he regarded as "retainable" pupils, and it is in a comparison of the actual retention of these in junior and non-junior schools by which he endeavored to evaluate the junior high schools on this score of retention.

Examination of the data pertaining to *all* junior and non-junior schools represented in the study encourages a conclusion that the former retain better than the latter, since

¹ J. Orin Powers, *Instructional Outcomes in Junior High Schools*, chap. iv ("Retention in Junior-High-School Grades"). University of Minnesota Press, 1927.

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in them 54.0 per cent of those who could leave did leave for the school-leaving causes named, whereas the percentage was 59.9 in non-junior schools. It is only when one examines the percentages for individual schools that one has the misgiving that this conclusion is premature. For instance, there is a variation for individual schools from 23.1 to 72.5 per cent, one retaining less than a third as large a proportion of "retainable" pupils as the other. For two schools presumably almost alike as to curriculum and housing, the percentages differ as widely as from 26.3 per cent in one to 69.0 per cent in the other. These differences lead to the suspicion, hinted at by Powers, that one or more very important factors outside the school are at work to make for these differences which were not accounted for in the investigation. Probably they are related in important ways to economic and social make-up of the sections of the city being served by these schools, since this varies widely from section to section in any large community. Before valid comparisons could be made to test the extent of retention effected by reorganization, it would be necessary to control this factor and compare groups of pupils from the same economic levels in the junior and non-junior schools. The critical student of education is, therefore, confronted with one more element in the complexity of the task of evaluating this claim of better retention through reorganization.

Conclusions concerning improved retention. Thus, the seeker after evidence to support the contention that the junior high school tends to prolong the pupils' educational career must satisfy himself with an almost total absence of conclusive factual material. He will take some comfort in certain of the findings which have been mentioned, as well as in other data showing the rapid increase in enrollment in particular localities following the establishment of

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junior high schools. For instance, for Cleveland, Ohio, in the five-year period from 1919 to 1924, while the enrollment in the six elementary grades experienced an increase of 14.3 per cent, the percentages of increment in secondary-school grades were as follows: Grade VII, 25.6; Grade VIII, 49.5; Grade IX, 90.3; Grade X, 119.4; Grade XI, 90.4; Grade XII, 102.5. While this influx would doubtless have taken place at least in part without the extension of junior-high-school facilities, one cannot easily resist the conviction that reorganization along junior-high-school lines had a good deal to do with it. The seeker after evidence will also take assurance from the large likelihood that the junior high school is holding boys better than does the conventional organization, especially since it is well known that boys rather than girls are eliminated from the latter. But he will rely mostly on his faith that the thoroughgoing junior high schools — and there are still too few even today — are destined in good time to overcome those causes of pupil mortality which lie within the school, through provision of a wide range of curricular activities designed to make it possible for many who now fail and lose interest to find something at which they can succeed. They will also, in some degree, remove those which lie without the school, such as the indifference toward education in the homes from which these children come. Notwithstanding the absence of unequivocal affirmative evidence, there is abundant justification for anticipating, as one result of effective reorganization, a greater retentive power of the school.

ECONOMY OF TIME

Nature of the claims. We are told in such expressions as the following that the junior high school will *economize time*: the "tools of learning may be acquired in six years"

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and "the junior high-school student [may] turn his attention in part at least to secondary-school subjects"; in this institution we will have no more "unnecessary duplication" or "wasteful and discouraging reviews," but, instead, "the American common school will break into the secondary field"; the junior high school will do away with the "monotonous repetition of common branches prolonged unnecessarily at the expense of secondary subjects which should be begun"; "current practices [in Europe] lend no support to the policy of postponing entrance upon secondary-school work until the completion of eight or nine years' elementary study. . . ." A number of school documents make mention also of shortening the period of education by granting credit in the senior high school for secondary-school work covered in the junior high school or for "ninth-grade work taken in the seventh and eighth grades." The methods set forth for economizing time are described as "in the interest both of the pupil who goes on and the one who does not."

In the history of the movement for reorganization this peculiar function was the first to be mentioned. It was stated in Chapter I that Eliot in 1888 urged the shortening and enriching of curricula, and since that time individuals and committees almost without number have importuned school authorities to abridge preliminary education. The stock argument, as is well known, has been the comparison of our own with European systems of education. This comparison is unfavorable to our system in that our period of elementary education is much longer, the beginning of secondary and higher or professional education thereby being indefensibly delayed.

Methods of economy suggested. The persistent emphasis upon this need for economy of time has been followed by a number of efforts in the direction recommended. Exam-

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ination of school documents touching on this problem of economy of time discovers that the most common of these efforts consists in introducing into the seventh and eighth grades such secondary-school subjects as the foreign languages and some supra-arithmetical mathematics. This is often done without at the same time aiming to shorten the usual twelve-year duration of elementary and secondary education. Frequently, however, the earlier introduction of secondary-school subjects is accompanied by an administrative feature which is in the direction of cutting down this twelve-year period. Examples of the latter are to be found in those school documents which say, "Many graduates of the eighth grade enter the high school with one or two high-school credits," "credit is given for ninth-grade work taken in seventh and eighth grades," or "pupils who take [a foreign language] three years will receive two units of credit in the senior high school." The instances of more daring variation from the norm of traditional practice that set out to reduce this period by a year or more for all pupils are deserving of special mention. With these must be included the reorganization instituted in Solvay, New York, in 1915, in which, after the conclusion of a six-year elementary-school period, the pupil who does not shift courses during his secondary-school career will complete it in five years. Another instance is the plan in East Chicago, Indiana, in which the program was so arranged that the twelfth year aimed to cover the equivalent of the work of the first year of college. The Laboratory Schools of the School of Education in The University of Chicago some years ago saved a year between the upper elementary grades and the high-school years and have more recently been at work to shorten further the period of training in later high-school and in junior-college years. Somewhere between these two extremes of method of (1)

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granting credit in the years of the traditional high school for secondary-school work covered during seventh and eighth grades, and (2) boldly cutting down the twelve-year period to eleven for the normal pupil, is that practice, borrowed from the four-year high school, which reduces this period for those of superior ability by allowing them the opportunity of carrying more than the normal load of work. No inconsiderable number of systems by this means shorten the period of elementary and secondary education for stronger students by a half year or more.

Functional economy of time. But economy of time through the earlier introduction of secondary-school subjects into pupils' programs must be paralleled by the reduction in the amount of time devoted to the subjects regarded as appropriate to the elementary school. The two methods are inevitably complementary. Moreover, if the latter should not be possible, the former must be regarded as inopportune. Since the appearance of the Report of the Committee on the Economy of Time, in which was presented an enhanced conception of the procedure by which economy is to be effected, we have had notable progress in the second method. A number of investigations have been made, some almost conclusive, others suggestive of large possibilities of economy in the elementary field. Space is available for reference to only a few of these investigations.

Some of these studies have been concerned with the problem of making courses in the elementary-school subjects "in the light of social surveys of what men need in knowledge, habits, powers, skills, and values."¹ One concerned itself with the errors made in English² by the

¹ Report of the Committee on the Economy of Time in Education, *United States Bureau of Education Bulletin No. 38*, 1913.

² W. W. Charters and Edith Miller, *A Course of Study in Grammar based upon the Grammatical Errors of School Children of Kansas City, Missouri, Bulletin of the University of Missouri*, Vol. 16, No. 2.

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children enrolled in the elementary schools of a large city system and the preparation of a course in grammar aiming at eliminating those errors. The findings prophesy a much smaller body of material for the course in grammar than has usually found a place in elementary-school curricula. Other investigations have sought to determine what words the adult will be most likely to find it necessary to spell¹ in material which he writes, with a view to preparing a minimal list which all children should be taught to spell correctly. The evidence of these studies points toward a much smaller list of words than we have in the past attempted to teach to our elementary-school children. Still another investigation sought to discover the range of abilities needed by the adult in arithmetic,² and, like the preceding, gives assurance of economizing time through elimination of nonessentials and through the presentation only of "what men need."

Economy of time in elementary subjects through scientifically selected methods, also advocated by the Committee on the Economy of Time, is perhaps best exemplified in the Report of the Committee on the Economy of Time in Learning.³ This report essays the presentation of the principles of method, derived from scientific investigation, in teaching the common-school branches of writing, reading, spelling, arithmetic, drawing, and music. While it

¹ One of the first of these was Leonard P. Ayres's "Measurement of Ability in Spelling" (Russell Sage Foundation). A number of studies have since added greatly to our knowledge along this line.

² Guy M. Wilson, "A Survey of the Social and Business Use of Arithmetic," Sixteenth Yearbook of the National Society for the Study of Education (1917), Part I, chap. viii. The major contribution of this chapter is reported more completely in Guy M. Wilson's "Social and Business Usage of Arithmetic," Teachers College Contributions to Education No. 100 (1919).

³ Fourth Report of the Committee on the Economy of Time in Education, Eighteenth Yearbook of the National Society for the Study of Education (1919), Part II.

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would be fatuous to contend that in this report or in those investigations into the materials of instruction to which reference has been made we have had assembled all the finalities requisite to a full solution of our problem, and while it seems improbable that the work in the fundamental processes may be limited to six years, as has often been proposed, there is ample evidence that eight years is more than should be devoted to equipping the normal child with such command of these tools as he will need in order to make possible his larger functional education.

The conclusion just drawn has the additional support to be found in the opportunity of abridging the time devoted to elementary education by eliminating many of the reviews with which curricula are padded. Verification of the fact of the prevalence and frequency of these reviews is furnished anyone who takes the pains to examine a number of typical courses of study.¹

Genuine economy will require that the secondary or other subjects displacing the eliminated elementary-school materials, and the methods of presenting them, be subjected to the same sort of scientific scrutiny and vital educational philosophy as is illustrated in the studies to which reference has been made. Much less progress has been made in this portion of the task, perhaps largely because of the unfortunate belief in the relative sacredness of the conventional high-school curriculum. Introduction of these materials unchanged into the program for seventh and eighth grades may hardly be regarded as a large stride toward democratizing the school system. We may anticipate that scientific methods of selection will bring into the program of the junior high school such portions of traditional high-school curricula and the methods of their pres-

¹ Carolyn Hoefer presents a corroboratory study in the *Elementary School Journal*, Vol. XIX, pp. 545-554.

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entation, or such new materials not yet finding a place in either elementary or secondary grades, as will make for genuine economy in the interests of democratization — democratization which provides a more effective education both for those who drop out early and for those who stay.

Economy through improvement of pupil progress. It should go almost without saying that no scheme of education is economical of time which does not have full regard for each pupil's progressing at a rate appropriate to him. A plan of organization which at any point requires him to mark time is wasteful. While little conclusive evidence is at hand to show that the junior high school is economizing time by moving all pupils as rapidly as they should go, it is apparent that expectation is largely in its favor. Through promotion by subject there will be eliminated the repetition of work in which a pupil has made a satisfactory record — a repetition which is all too frequently forced upon him because he has failed in one or more subjects under the conditions of promotion common to our upper elementary grades. The junior high school, because it brings together larger numbers of children of given ages and grades than does the conventional plan, may also more readily group them in homogeneous sections.

Conclusion on economy of time as a peculiar function. In line with this discussion, economy of time may be conceived of as having two chief aspects: (1) that of *shortening the period of training directly*, by eliminating portions of the training materials, or by more rapid progress of pupils through the grades, and (2) that of *enriching the training program* through a period of years of the same length as formerly, by *depressing into lower years certain content formerly reserved for high school*, or by *introducing new and more vital content drawn from other sources*. Educational

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writers sometimes—and unfortunately—conceive of economy of time as being restricted to the first of these senses. For example, Davis writes as follows:¹

This motive . . . was notably strong at the outset of the reorganization movement. In the last few years, however, the idea has been submerged, if not wholly abandoned. It is a question whether the best interests of society and of boys and girls can be secured by reducing the period of liberalizing education. It is possible that greater benefits may be secured by enriching the program of studies and intensifying the training of pupils throughout the usual number of scholastic years.

Davis subsequently shows that the concept of economy of time in the narrower sense in which he refers to it has still some currency. In point of fact it is not difficult to find energetic protagonists of this direct economy of time. But the second of the two senses of the concept, *enrichment*, is much more important than the first, and *it may be stated with some assurance that it has not been and cannot be abandoned.*

Before leaving the discussion of this function it is pertinent to refer to one detail of the results of an analysis of "special purposes" of the junior high school recently reported² which may mistakenly appear to some to point to an almost general abandonment of the concept of economy as a whole. "Effecting economy of time" is indicated as having appeared in but 1.7 per cent and 10 per cent, respectively, of statements by school administrators and college specialists published since 1920. Because of the frequent recurrence by direct statement and implication, in recent literature on junior-high-school purposes, of the demand for *enrichment*, it is safe to say that these

¹ Calvin O. Davis, *Junior High School Education*, p. 58. World Book Company, 1924.

² The Junior-High-School Curriculum, Fifth Yearbook of the Department of Superintendence (1927), pp. 20-21.

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small percentages include only the phase of economy of time represented in efforts to shorten the period of training.

One may conclude that by means of the complementary processes of shortening the total time devoted to elementary subjects and of the earlier introduction of functional secondary or other subjects and by means of administrative devices which will advance each pupil to higher levels as rapidly as he should go, the junior high school may be confidently expected to achieve a large economy of time in a democratic way.

RECOGNITION OF INDIVIDUAL DIFFERENCES

The claims made. Illustrative expressions concerning the function of *recognizing individual differences* are: "One of the chief motives behind the junior high school has been the great adaptability to the individual needs and individual differences"; the junior high school will recognize "inherent and universal natural differentiation"; it will make "better provision for individual differences, abilities and tastes"; it will make provision for "preparation for the diversified duties of democratic society by giving full recognition to individual capacities and individual training"; it "will recognize individual differences and group pupils according to interests and ability"; it will "meet the varying mental capacities and economic needs of pupils"; it will "offer opportunity for over-age pupils regardless of scholastic attainments."

Variation of pupils illustrated. There is abundant evidence of the fact of variation and of the need of making some recognition of it in the instruction and administration of our schools. Charts of age-grade distributions, now available for many school systems, have emphasized the wide variation in chronological age in a single grade. This

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may be illustrated by the situation found in the seventh grade of the Ashland, Oregon, public schools in 1915.¹ In a group of only 82 pupils there were representatives of each age from eleven to seventeen, inclusive, showing a range of six years between the youngest and the oldest pupils (see Fig. 3). Tables similarly constructed for school systems enrolling larger numbers of pupils in this grade discover

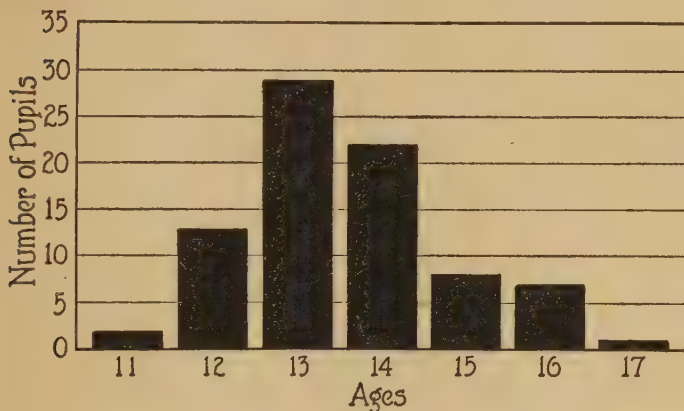


FIG. 3. Distribution by ages of 82 pupils in the seventh grade of the Ashland, Oregon, public schools

ranges of seven, eight, and even nine years. It is shown later in discussing the nature of the child, that these great differences in chronological age are paralleled by comparable differences in measurements of physique, such as height, weight, lung capacity, and strength of grip. There are also wide differences in sex maturity of pupils of the same grade, so wide, indeed, that some pupils enrolled in the seventh grade of a single school have been sexually mature for three or four years, while at the other extreme

¹ F. C. Ayer and Others, Constructive Survey of the Public School System of Ashland, Oregon.

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will be found those who will not arrive at pubescence until two, three, or even four years have passed.

But the variation is not physical only ; it is also mental. The latter is illustrated by Figs. 4 to 7. The first of these figures shows the distributions of the scores made in

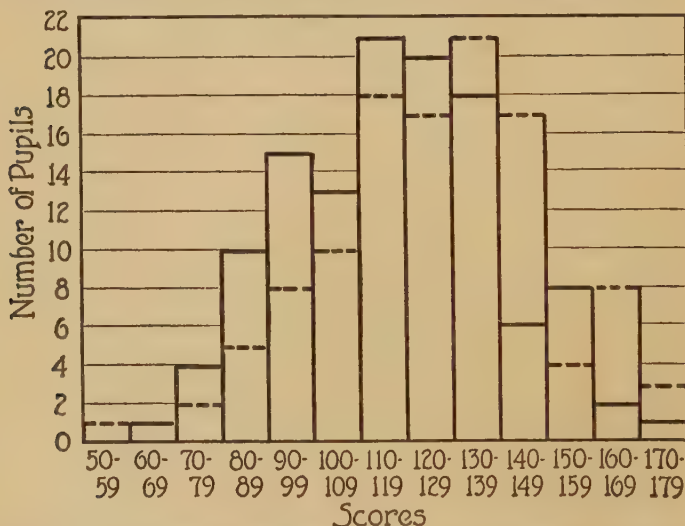


FIG. 4. Distribution of total point scores of 119 pupils in the eighth grade of the Santa Ana, California, public schools (solid line) and of 114 pupils in the ninth grade of the Thornton Township High School, Illinois (broken line)

the Otis Group Intelligence Tests by 119 pupils in the eighth grade of the Santa Ana, California, public schools¹ and of 114 pupils in the ninth grade of the Thornton Township High School, Illinois.² Both distributions emphasize the wide range of mental ability found in the same

¹ M. B. Henry, *Mental Testing as an Aid in Guidance and Classification of School Children*, *Bulletin No. 1*, p. 10, Fig. II. Department of Research, Santa Ana, California, Public Schools.

² These scores have been made available through the kindness of O. W. Snarr of The University of Chicago.

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grade. In both groups there are children who obtained scores approximately three times as high as those obtained by pupils at the lower limit of the distribution of scores.

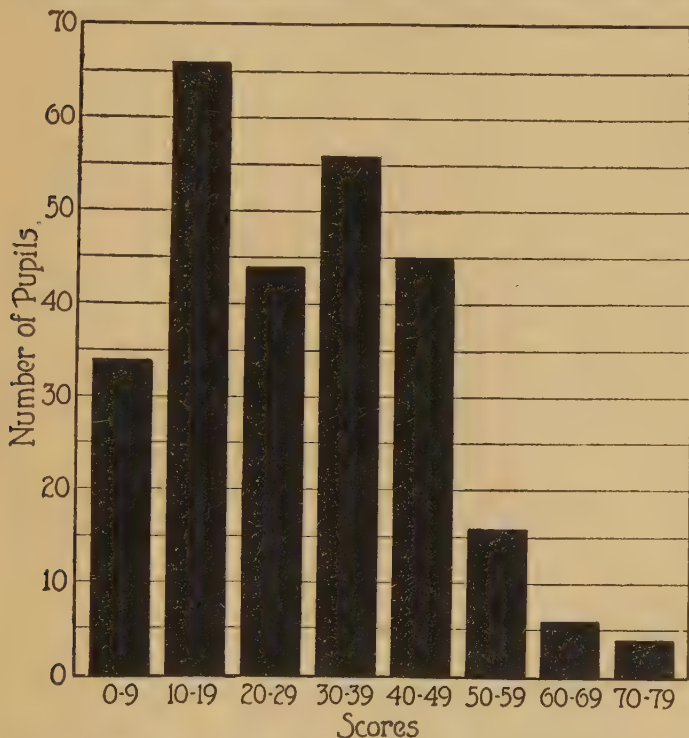


FIG. 5. Distribution of scores for quality of silent reading of 271 pupils in the eighth grade of the Cleveland, Ohio, public schools

The remaining Figs. (5 to 7), presenting the results of measurement of performance of pupils in the seventh or eighth grade, display variation no less in extent. Fig. 5, adapted from Gray,¹ shows a strikingly wide variation in

¹ W. S. Gray, *Studies of Elementary-School Reading through Standardized Tests*, Supplementary Educational Monograph No. 1, Vol. I, p. 116.

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comprehension ("quality") of silent reading among 271 pupils in the eighth grade of the Cleveland schools. Fig. 6, taken from Willing's study of composition in the Grand Rapids schools,¹ illustrates the wide differences found in the work of written expression. Fig. 7, presenting the distribution of scores of 78 seventh-grade pupils in

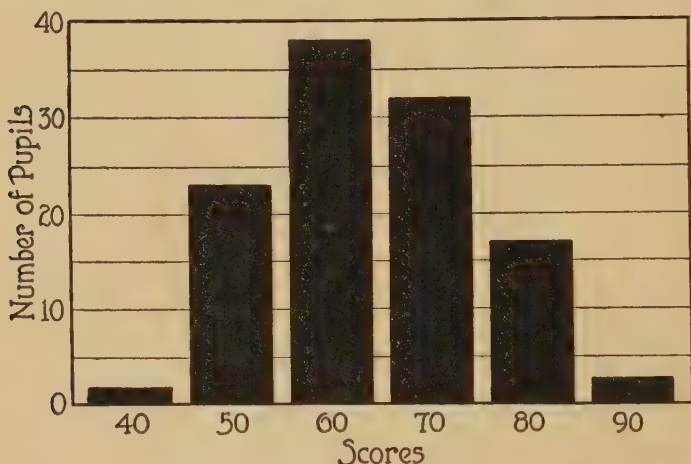


FIG. 6. Distribution of scores in composition of 115 pupils in Grade VIII 2 in the Grand Rapids, Michigan, public schools

Ellensburg, Washington,² as tested by the Woody Multiplication Scale, Series B, is illustrative of a similar variation.

Despite the small number of pupils involved, almost all these figures approximate, at least roughly, the "surface of normal distribution" which finds most of the pupils grouped about the central measures of quality of performance with a symmetrical attenuation of numbers of pupils above and below the central measures. The persisting re-

¹ School Survey, p. 92, Grand Rapids, Michigan.

² Made available through the kindness of Dr. Clifford Woody of the Department of Education, University of Michigan.

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currence of this distribution has itself been no unimportant factor in convincing the scientific educator of the need of recognizing differences found. If such distributions appeared only occasionally, we should feel much less moved to action.

Another factor of the urgency of recognizing individual differences is the expanding range of variation as we proceed from grade to grade. The range is usually wider in the

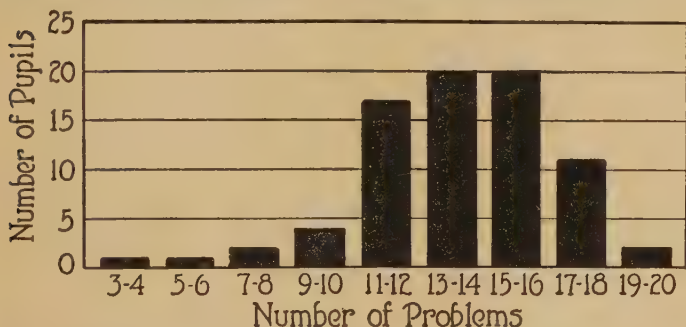


FIG. 7. Distribution of 78 pupils in the seventh grade of the Ellensburg, Washington, public schools, according to the number of problems in multiplication solved

sixth grade than it is in the fifth, and wider in the seventh grade than it is in the sixth, etc. This tendency is partially checked in upper elementary grades by what is called "qualitative elimination," the tendency of the less capable pupils (and others doing poorer work) to drop out at or near the termination of the compulsory school period. The widening variability is illustrated in the measures of intelligence presented in Table II, which, besides reporting the median (middle) scores, cites the upper and lower quartiles and the difference between these two points in the distributions (see the footnote to the table for an explanation of terms). Data are presented for Grades IV to VIII and

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Grade XII. Those for Grades IX, X, and XI are omitted because the numbers of pupils represented were much smaller. The range of the middle 50 per cent, the simple measure of variability here used, may be seen to increase from grade to grade, slackening somewhat between Grades VII and VIII, but enlarging again somewhere between

TABLE II. LOWER QUARTILE, MEDIAN, AND UPPER QUARTILE TEST SCORES, AND RANGES OF MIDDLE 50 PER CENT OF TEST SCORES FOR PUPILS IN GRADES IV TO VIII AND IN GRADE XII (MYERS MENTAL MEASURE)¹

MEASURES	GRADES					
	IV	V	VI	VII	VIII	XII
Lower quartile	25.7	31.2	36.1	38.5	44.1	47.4
Median	33.6	38.6	43.6	47.8	52.4	63.0
Upper quartile	40.8	47.2	52.5	56.3	62.0	73.9
Range of middle 50 per cent	15.1	16.0	16.4	17.8	17.9	26.5

this point and the last high-school grade. Increasing variability from the seventh grade upward is shown also in Table III, the exception being a shrinkage between the last two high-school grades.

It is worth reëmphasizing that such increased variation as there is from grade to grade² obtains despite the qualitative selection which has already been referred to. The nature of this selection is suggested in Fig. 8, which shows graphically for one school system, enrolling in all about fifteen hundred pupils, the percentage distributions

¹ Computed from distributions of scores presented in "Measuring Minds — an Examiner's Manual to Accompany the Myers Mental Measure," pp. 23-24 (Newson and Company, 1921).

² It is well to bear in mind that the increased variation is by *grade* and *not* by *age*. Frank N. Freeman shows on pages 349-353 of his "Mental Tests" (Houghton Mifflin Company, 1926) that the measures of variability remain fairly constant when age only is taken into account. This difference is to be explained by the conditions of promotion in the present-day school situation.

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of intelligence quotients of pupils in three groups of grades, namely, (1) the fourth, fifth, and sixth, (2) the seventh, eighth, and ninth, and (3) the tenth, eleventh, and twelfth. These groupings correspond to what are termed (1) intermediate, (2) junior-high-school, and (3) senior-high-school grades. The shift of the distributions toward the higher

TABLE III. FIRST QUARTILE, MEDIAN, AND THIRD QUARTILE TEST SCORES, AND RANGES OF MIDDLE 50 PER CENT OF TEST SCORES FOR PUPILS IN GRADES VII TO XII (TERMAN GROUP TEST OF MENTAL ABILITY) ¹

MEASURES	GRADES					
	VII	VIII	IX	X	XI	XII
Lower quartile	51	69	81	98	112	122
Median	68	89	104	122	128	147
Upper quartile	88	112	128	147	163	169
Range of middle 50 per cent	37	43	47	49	51	47

intelligence quotients in the advanced grades of the system is unequivocal. Qualitative elimination may be illustrated again by drawing once more on Powers's investigation from which citation was made above while discussing the function of retention. Among other aspects of his study was one reporting the intelligence quotients of "retainable" pupils leaving school. In a random sample of 117 such pupils the intelligence quotients for only 10 were at or above 100, and for only two were above 110.² It should be clear that, if the junior high school offsets the selective influences, an achievement to be inferred from the function of retention as accepted, its task of recognizing individual differences will be almost correspondingly increased.

¹ Manual of Directions for Terman Group Test of Mental Ability for Grades VII to XII, p. 9. World Book Company, 1923.

² J. Orin Powers, *Instructional Outcomes in Junior High Schools*, chap. iv. University of Minnesota Press, 1927.

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The diversity of *interests* of children may be illustrated by Tables IV and V which, respectively, name the occupational choices of 324 boys and of 294 girls in the Springfield, Illinois, public schools. The interests thus represented

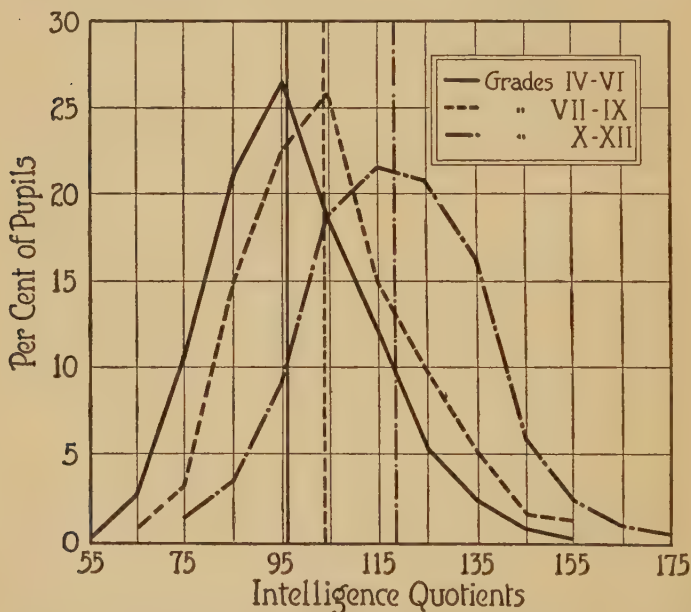


FIG. 8. Percentage distributions of intelligence quotients of pupils enrolled in (1) Grades IV-VI, (2) Grades VII-IX, and (3) Grades X-XII in the Austin, Minnesota, public schools, 1921-1922. (The vertical lines locate the medians.) (Computed from Mervin G. Neale's "Studies of Instruction in the Austin, Minnesota, Public Schools" (*Bulletin* of the University of Minnesota, Educational Monograph No. 2, p. 91))

are indeed diverse. Interests of children are, of course, not restricted to vocational lines. Those which may be classified under social, recreational, athletic, and other groupings are doubtless no less multitudinous. Most of these

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TABLE IV. OCCUPATIONAL CHOICES OF THIRTEEN-YEAR-OLD BOYS IN
THE SPRINGFIELD, ILLINOIS, PUBLIC SCHOOLS¹

OCCUPATION	NUMBER CHOOSING	OCCUPATION	NUMBER CHOOSING
Farmers	40	Aviators	2
Machinists	26	Managers and superin- tendents	2
Electricians	26	Barbers	1
Retail merchants	22	Contractors and build- ers	1
Locomotive engineers	19	Railroad foremen	1
Bookkeepers	19	Restaurant owners	1
Lawyers	17	Mail-carriers	1
Civil engineers	15	Brakemen	1
Retail clerks	12	Linemen	1
Carpenters	10	Tailors	1
Doctors	9	Molders	1
Factory hands	7	Shoemakers	1
Miners	5	Hostlers	1
Traveling salesmen	5	City firemen	1
Plumbers	5	Sign-writers	1
Architects	5	Plasterers and paper- hangers	1
Stenographers	5	Chauffeurs	1
Teamsters	4	Bankers	1
Butchers	4	Commission merchants	1
Stationary engineers	3	Dairymen	1
Office clerks	3	Undertakers	1
Manufacturers	3	Stereotypers	1
Blacksmiths	3	Dentists	1
Teachers	3	Harness-makers	1
Porters	3	Politicians	1
Bakers	3	Baseball-players	1
Musicians	3	Soldiers	1
Train-dispatchers	2	Waiters	1
Street-car conductors	2	Window-trimmers	1
Laundry owners	2	Learn some trade	1
Patternmakers	2		
Florists	2		
Printers	2		
Artists	2		

interests are deserving of recognition in the educational process, and therefore add much to the complexity of the school needs of children of these and neighboring ages.

¹ Leonard P. Ayres, *The Public Schools of Springfield, Illinois*, pp. 129-130. Russell Sage Foundation.

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The factors of variation. It may not be out of place here to say a word concerning each factor of such variation as is found in school grades, inclusive of those peculiarly operative in the grades we now commonly associate with the junior high school. They may be classified for our purposes as (1) *inherited* and (2) *environmental* factors and

TABLE V. OCCUPATIONAL CHOICES OF THIRTEEN-YEAR-OLD GIRLS IN THE SPRINGFIELD, ILLINOIS, PUBLIC SCHOOLS¹

OCCUPATION	NUMBER CHOOSING	OCCUPATION	NUMBER CHOOSING
School teachers	76	Artists	2
Stenographers	71	Office work	2
Music teachers	26	Writers	2
Keep house	23	Librarians	2
Dressmakers	16	Traveling saleswomen .	2
Nurses	15	Telephone operators .	1
Bookkeepers	13	Moving-picture	
Retail clerks	11	actresses	1
Milliners	11	Lawyers	1
Musicians	6	Elocutionists	1
Factory work	6	Hair-dressers	1
Servants	4	Business women	1

those attributable to (3) stage of *maturity*, to (4) *sex*, and as may be judged from the data already reported concerning the extent and nature of elimination from school, to (5) the degree of *selection*. This classification of factors of variation is, of course, that of the educator rather than that of the biologist.

We no longer question the determination of physical and mental traits by biological heredity, and we are becoming increasingly aware of the definite limits upon the possibilities of training fixed by the inheritance with which nature has endowed the individual. There is general agreement among the informed that there are differences due to hered-

¹ Leonard P. Ayres, *The Public Schools of Springfield, Illinois*, p. 131.

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ity, both in physique and mentality, too great to be bridged by any adjustment of training.

Environmental influences are also ordinarily believed to be potent in making for variation between individuals of identical native endowment. Among these environmental influences are the kind of previous education in school; home conditions, inclusive of intellectual traditions, occupations, and recreational and other interests of members of the family; and neighborhood surroundings. These are in turn determined in no small part by what are sometimes referred to as "race differences," especially in cities whose populations are constituted in considerable proportions of recent immigration of peoples whose traditions and attitudes are notably unlike those of peoples who came to our shores a generation or more ago. These race differences, particularly as concerns mental traits, are now regarded as social rather than biological, since "present-day anthropology does not pretend that any of the characteristic mental powers, such as memory, inhibition, abstraction, logical ability, are feeble or lacking in any race."¹ "There can be little doubt," says Boas,² "that in the main the mental characteristics of man are the same all over the world." A denial of differences in kind is not, however, at the same time a denial of differences in degree of endowment in mental traits. On this score there is increasing acceptance of the belief that while there is probably some difference in degree of endowment in mental traits as between two races, these differences are far from as large as those among individuals within any single race.

Mention has already been made of the wide variation in

¹ William I. Thomas, "Race Psychology: Standpoint and Questionnaire, with Particular Reference to the Immigrant and the Negro," *American Journal of Sociology* (May, 1912), Vol. XVII, pp. 725-757.

² Franz Boas, *The Mind of Primitive Man*, p. 105. The Macmillan Company, 1911.

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progress toward maturity, as measured by chronological and physiological age, to be found in any one of the grades included in the junior high school. The factors of biological heredity and environment must be admitted to be influential in determining these differences in maturity. The school itself — an environmental influence — is to be held accountable for somewhat unduly accentuating them. Sex differences also affect this variation, as girls on the average mature one to two years earlier than boys.

The differences between boys and girls are more in the nature of differences in physical make-up and in interests and tastes than in intellectual capacity. Equality in native mental capacity is now seldom questioned. The differences in physique which manifest themselves at puberty, among them the greater robustness of the male, are too obvious to require demonstration. The differences in interests and tastes are also readily apparent. It is difficult, if not impossible, however, to ascribe these definitely either to differences in native endowment or to the suggestions of the society in which boys and girls grow up. It is more than likely that they are attributable to both, the influences of the social organism sometimes adding to, sometimes subtracting from, the differences of inborn nature.

An individual pupil is, of course, the product of the action of all the factors we have thus briefly described. This fact is anticipative of an almost endless variety of make-up of pupils, as it is hardly to be expected that there will be many pupils in whom all the factors will be identically operative. The "average" child, as is often stated, is nonexistent, at least in the sense of being average in all respects. The combination of factors will sometimes operate to diminish differences, but it will often make for wider differences than would otherwise be possible. This may be illustrated by the contrast of the child endowed with

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an inferior mentality who is born into surroundings unfavorable to intellectual progress with one of superior mentality nurtured in a home with superior traditions.

How the differences are to be recognized by the school. A big problem for education is to determine in what direction the individual differences in ability and interest are to be fostered, and in what directions we should endeavor to diminish them. The solution must depend upon our decision as to the extent to which, in the realization of each of the ultimate aims of education set forth in the opening paragraphs of the present chapter, we desire to achieve on the one hand differentiation, and on the other, similarity of personal make-up. There will be no disagreement with the statement that, as concerns the physical aim, our endeavors will be to bring our school population up to a uniformly high level of physical efficiency. But to accomplish this we cannot rely upon identity of educational procedure, since we find in the seventh grade, for instance, because of the varying operation of the factors of heredity, environment, maturity, and sex, an almost endless variety of physical organisms. Each of these will require some measure of individual treatment. An analogous situation obtains in regard to the achievement of the civic-social-moral aim. In the vocational aim we shall need to strive more for differentiation. In the aim to train for the proper use of leisure time we shall probably find it desirable to secure both differentiation and similarity. For instance, while all children should be taught to make recreational use of reading, it will be necessary and desirable to guide reading interests in some part along diverging channels. Again, for those who are natively well endowed musically, it will be desirable to encourage training for participation by performance as well as for appreciation. For those less well endowed, appreciation only should be our objective.

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The relation of this pressing need of recognition of individual differences to the demand for reorganization is not far to seek. In recent years there have been many commendable efforts at improvement in elementary-school organization and methods of instruction, directed toward such recognition. These have been well summarized by Freeland,¹ who, in a chapter on methods of adjusting school work to individual needs, makes mention of the necessity of studying each child, individualizing the recitation and assignments, adapting school requirements and courses to special cases, and modifying school machinery through provision of more frequent promotion, special classes, and special periods for individual work.

These modifications in school practice may be adequate for grades below the sixth or seventh, but with the greater imperativeness of recognizing individual differences at about this time, growing out of their actual increase and the child's rapid approach to maturity, they can no longer suffice. The schools must have recourse to the additional opportunities for such recognition provided by the / junior high school in (1) the expanded differentiation of work through partially variable curricula, (2) groups moving at differing rates, (3) promotion by subject, (4) permitting brighter pupils to carry more courses, and (5) supervised study. The first of these features is designed to recognize \ differences both in ability and interests. It is especially well suited for that point in their school careers when many children must, and all children should, begin to give more serious thought to vocational choice. The second is already being provided in some elementary schools, but may be seen to be more frequently feasible in the junior high schools with their larger numbers of children in any grade.

¹ G. E. Freeland, *Modern Elementary School Practice*, chap. xv, pp. 341-367. The Macmillan Company, 1919.

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The third makes allowance for the fact that many children cannot do equally well in all subjects of study. The significance of the fourth for the recognition of individual differences should be apparent without elaboration here. The last, although sometimes introduced in the elementary school, is more frequently found in the junior high school. One of the advantages rather commonly ascribed to it is its adaptability to recognizing individual differences.

Concisely, the junior high school, through the features of its organization which are impossible or less possible of provision in the traditional elementary school, will make a nearer approach to giving each child the kind of education he needs. This is a better approximation to democracy in education than is the complete identity of training for all children at which many schools still seem to be aiming.

EXPLORATION AND GUIDANCE

Types of advocacy of this purpose. Under *exploration and guidance*, educational and vocational (see Table I and Fig. 1 on pages 17 and 19), have been classified statements similar to these: "There will be an opportunity for pupils to explore several fields to see where they fit"; they will thus "have a basis for making a selection when the time for specialization comes"; "in such a school it is possible in various ways to test each child and thereby find out what are his natural interests, his ambitions, and his capacities"; the junior high school makes "provision for educational and vocational information and guidance"; the training in the practical arts "may help toward vocation finding." Here also have been classified those statements speaking of "prevocational education" in the sense of a curricular organization which allows the pupil to sample a number of activities with a view to a more intelli-

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gent choice of occupation. Other uses of this term have been classified under the peculiar function next following.

Increased advocacy in recent years. Reference to Table I and Fig. 1, in which are presented the results of the analysis of school documents and other educational literature pertaining to the junior high school, will show that, although often referred to, this function of exploration and guidance is not so frequently proposed as certain other purposes in the list. One analysis of recent literature shows "prevocational training and exploration" and "counseling or guidance" — two phases of essentially a single broad concept — as among the most frequently recognized "special purposes" of the junior high school.¹ The ascendancy of this purpose is one of the most significant movements which have latterly affected junior-high-school issues. Among those who have advocated the full assumption of the obligation of guidance is Glass, who may be taken to exemplify the modern attitude on this question. In a recent article, in which he states that "the *method* of the junior high school is *guidance*, and upon its method more than upon its organization and objectives will depend its progress and fullest service," he dilates on this function as follows:²

The junior high school has been variously entitled as the finding, the sorting, the trying-out, and testing period of the public school system. It is a probationary period before the vital question of educational or vocational choice is finally determined. Exploration of individual differences, the revelation of educational and vocational opportunities adaptable to individual differences, guidance of educational or vocational choice, equalization of opportunities, the adaptation of educa-

¹ The Junior-High-School Curriculum, Fifth Yearbook of the Department of Superintendence (1927), pp. 20-21.

² James M. Glass, "The Junior High School," *The New Republic*, Vol. XXXVI, Part II, No. 466 (November 7, 1923), Educational Section, pp. 20-21.

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tional offerings to ascertained individual needs rather than the conforming of all pupils to one educational pattern, and the stimulation of educational or vocational vision which conditions all progress in secondary education, all these and other purposes to adapt the educational program to the "individual" are the objectives of the junior high school.

Its acceptability. This function of exploration and guidance is corollary to the function just discussed, the recognition of individual differences, and therefore requires no extended justification. Granted that there are differences among our pupils sufficiently important to be recognized, it follows that we must provide the machinery for their discovery. Manifestly, also, this function must be performed before the differences may be discerningly recognized. The fact that reorganization of the right sort may be expected to hold a larger proportion of the children of school age than is being retained in school at present brings additional need for the discharge of this obligation, just as it brings greater need for the recognition of individual differences. These needs are likewise particularly urgent in the grades properly to be included in the junior high school, because in them the bulk of elimination from school takes place. On account of the imminence for many of the end of the school career and also on account of rapidly approaching maturity for all, there is in these grades a notable tendency to, as well as an appropriateness of, concern in the choice of an occupation.

Inefficacy of the school in guidance. Educational and vocational guidance may be thought of as being helpful in several ways. Among the first of these to occur to mind are assistance in selecting courses and curricula, and assistance in selecting a life work. Because it is more immediate, our schools are probably more helpful in the former than in the latter. Data available concerning one

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large group of 1605 ninth-grade pupils prompts the inference that schools under present conditions are of relatively little direct use to the pupil in making his choice of an occupation. These pupils had been asked to rank ten listed causes in the order of their influence on occupational preferences made.¹ The statistical computations made on the returns gave the causes the following order, the first being most influential, the second the most influential but one, etc. :

1. Friends and others outside of school.
2. Parents' wishes.
3. The desire to help other people.
4. The wages paid.
5. The fact that a relative is engaged in it.
6. The pupil's experience outside of school.
7. Reading and study outside of school.
8. Talking with teachers.
9. Information from shop or industrial courses.
10. Reading and study in school.

It is not flattering to the efficacy of the school in guidance that the three intra-school influences are last in the list, all non-school causes ranking above them. Adverse comment is still applicable after one concedes that occupational preferences indicated by pupils of the ages represented should be regarded as tentative and that many pupils will and should revise their preferences, even after the school succeeds in providing the broader basis of selection.

The concept of exploration and guidance. As is expressed in the dual nature of the name given to this distributive function of the school, it may be thought of as having two phases. The first of these is concerned with "try-out" of subjects and subject groups, and experiential contacts in the school shops or elsewhere with occupational life. The

¹ J. Orin Powers, *Instructional Outcomes in Junior High School*, chap. ix. University of Minnesota Press, 1927.

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second is concerned with other phases, such as assistance in course or curriculum selection, in the choice of present and future lines of activity, such as occupational, recreational, social, etc. The *function is one*, the two terms merely being somewhat suggestive of the two groups of means at hand by which it may be performed. The two phases are such as to react on each other to the better performance of the distributive function as a whole.

Decreasingly the function of exploration and guidance is thought of as applying only to occupational life and increasingly it is being spread to the other major relationships of life, the avocational, the social, and health. For the most part this trend is wholesome, since, as may be judged from the four phases as now typically recognized in the formulations of the aims of education, comprehensive living is more than efficiency in one's occupation. There is, however, one danger which should be guarded against in accepting the trend, and this concerns making "guidance" essentially another synonym for or definition of "education." Judging from writings on the subject, such a coalescence has already been accomplished in the minds of certain workers in the field. The untowardness is, of course, not in the broadening of the concept to touch all of life, but in losing sight of the extremely important special purpose of guidance (or distribution) in the more restricted sense. Guidance in the broadest sense of being synonymous with "education" is no more distinctive of the junior high school than of the kindergarten or of the college. Those who have to do with the new unit in the system should make sure that, in accepting the widened concept, they do not forget the special responsibilities of junior-high-school years.

A preview of the means of exploration and guidance. It is to be conceded that there is some opportunity for exploration and guidance in the conventional school organization.

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The statement often made, that success in current school curricula is no index of success in adult life, does not square with the facts. The selective value of even the most conservative curriculum is incontestible.

On the other hand, neither such a curriculum nor those in the better elementary schools, extended as they now are by the addition of such subjects as shop work and the home arts, can adequately perform this function. We shall need to have a thoroughgoing reorganization in the grades under consideration before we may canvass the child's abilities and interests satisfactorily or permit him to test them out. This purpose may not be accomplished without a much enriched and enlarged program of studies, including a wide range of academic and practical-arts subjects, administered with the performance of this function specifically in mind. Nor may we accomplish it without teachers who, being more in the nature of specialists in the lines they are teaching, have had more generous contacts with the world's work and the relations of their subjects to it than have most of our elementary-school teachers. With such a program and such teachers it will be possible for the child to become acquainted, through participation and vicariously, with the chief departments of human knowledge and activity. By adding to these such features of school machinery as mental and vocational testing, a wide range of student activities, and an adequate organization for guidance in the narrower sense, the enhanced possibilities of exploration and guidance in the junior high school become still more apparent. Although these and the kind of program referred to are not yet frequently introduced into schools so named, the movement is distinctly in that direction.

The feasibility of providing most of these features may be seen to be dependent upon the presence in a given

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school of a larger number of children than are to be found in the upper grades of the usual elementary school. Therefore the concentration of pupils accompanying the establishment of the junior high school should be regarded as distinctly encouraging such provision.

The more extended characterization of the features essential to the performance of this function is deferred to subsequent chapters.

PROVISION OF THE BEGINNINGS OF VOCATIONAL EDUCATION

The claims illustrated. Under the head of the function of *vocational education* have been placed such statements as affirm that the junior high school is "helpful in . . . vocational training. Graduates of the junior high school would be old enough and would have received excellent training to enter a trade school or begin an apprenticeship." Again, this institution will "fit each individual, at least in a general way, to become an efficient worker in his chosen field." In the same vein is the statement that "it is possible and highly desirable [in the junior high school] to give [the pupils] such general training . . . as shall enable them readily to adapt themselves to the requirements of whatever occupation they finally enter." A few speak of pre-vocational education in a sense almost identical with general vocational education. A few others think they see in this new institution the opportunity for intensive training for specific vocations, although the trend of thought is clearly not in the latter direction.

The acceptability of this function considered. The *beginnings* of vocational education are guaranteed to the pupil in the junior high school by the full performance of the function just discussed, exploration and guidance. If the

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pupil in this school is permitted, for purposes of guidance, to participate in a generous variety of vocational activities, he is at the same time receiving what may be termed "general" vocational training which should stand him in good stead, should he later enter, with or without subsequent vocational training, any specific occupation represented in the exploratory courses. *Proper opportunities for exploration thus constitute, especially if the methods and processes of industry are illustrated, a sort of general vocational education which is a by-product of the achievement of another important function.* This measure of vocational education meets with little or no objection.

It is around the proposal to provide in the junior high school more extended training for specific vocations that most of the disagreement centers. Those who contend for it are prone to bring the charge that the failure to concede the necessity for such an extent of vocational education by its opponents is due to the usual trepidation of tradition-bound educators to enter upon a program of serious vocational education. While this may not be wholly untrue, it must be apparent that there are real grounds for hesitancy. One of these is the relative immaturity of most of those enrolled in the junior-high-school grades, and the concomitant danger of thus early committing the pupil to narrow specialization. Another and important one is what appears to be the infeasibility of the proposal, which has been well expressed in the report of the Cleveland survey, from which the following is quoted:¹

In the junior high school, as in the elementary school, the greatest difficulty in the way of trade training for specific occupations lies in the small number of pupils who can be expected, within the bounds of reasonable probability, to enter

¹ R. R. Lutz, *Wage Earning and Education*, pp. 48-49. Cleveland Foundation Survey.

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a single trade. Hand and machine composition, the largest of the printing trades, will serve as an example. In a junior high school of 1000 pupils, boys and girls, the number of boys who are likely to become compositors is about five. But to teach this trade, printing equipment occupying considerable space is necessary, together with a teacher who has had some experience or training as a printer. The expense per pupil for equipment, for the space it occupies, and for instruction renders special training for such small classes impracticable. All of the skilled occupations, with the exception perhaps of the machinist's trade, are in the same case. An attempt to form separate classes for each of the eight largest trades in the city would result in two classes of not over five pupils, three classes of not over ten pupils, and only one of over thirteen pupils.

The surveyors proceeded then to recommend the provision in the junior high schools of Cleveland of a "general industrial course" for "those boys who, on the basis of their own selection or that of their parents, are likely to enter industrial pursuits."

Two queries, having a good deal in common, come to mind in considering the acceptability for this or other communities of this conclusion of impracticability. The first refers to the appropriateness of the attempt to apply to each section of a large city like Cleveland, which might be served by a junior high school, proportionate representation in the different occupations as found for the city as a whole. Populations of large cities are not so distributed that interests and needs of pupils for the types of training referred to in the quotation would be found in equal proportions in all junior-high-school districts. In some sections the proportions likely to enter the industrial occupations named illustratively would be much larger — large enough to bring the numbers interested up to practicable size; in others they would be almost totally lacking, but interest in other groups of occupations would replace that in indus-

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trial occupations. Populations in large cities are known to be distributed in something like economically homogeneous sections, in some of which the provision of opportunities for specific occupational training in the last year or two of the junior-high-school period might be both practicable and desirable.

The second query concerns the applicability of the conclusion quoted to communities much smaller than Cleveland. Something like the problem in sections of a large city would be that in communities of ten to twenty thousand population in which there are one or two dominating industries calling for large numbers of skilled workers in but a few lines, as, for instance, machinists or furniture workers. Certainly, junior high schools in smaller agricultural communities cannot fail to give some special training for farming pursuits, especially to boys whose school work is soon to be interrupted. The junior high schools of Vermont, some of which are in communities where the provision of senior-high-school work would be inadvisable, may be judged to be making just such an educational offering.¹ Under this head would come the extended training in the home arts which should be offered in most junior high schools, at least to those girls who are destined to leave school without attending the senior high school. *A large number of over-age children in the grades of the junior high school should always raise the question of the advisability of caring for their needs of specialization in the event that those needs are not or should not be cared for elsewhere in the system, as in a separate vocational school.*

These considerations are not adduced to support a conclusion that every junior high school should make provision for the training of its pupils for specialized occupations.

¹ C. M. Hill, Vermont Junior High Schools, *Bulletin No. 1*, Board of Education, State of Vermont, 1918.

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Even after careful consideration of the needs of the pupils and of the community of location, *the authorities in charge of most junior high schools must conclude that the provision of specialized training in these grades is unnecessary and undesirable.* The conviction grows that the junior high school is *not typically* a place for this kind of training. This conviction is upheld by the fact of improved promotional rates helping to keep down the amount of over-ageness, and the improved retention which is holding pupils into senior-high-school grades where opportunities for specialization are more and more being provided. It is, nevertheless, vital to ward off the opposite belief, now sometimes held, that junior high schools should always refrain from giving training for specialization. The best interests of the given group of pupils must always be the chief criterion, and in some localities, as has already been emphasized, these may call for specialization of training for those who are over age or who for other reasons must leave school before or near the end of the junior-high-school period.

Although it may not seem so on first thought, it is appropriate to refer, in passing, to the inroads on general training of the junior-high-school period which may be made by the imposition of college-entrance requirements in such a way that they interfere with setting up a suitable curriculum for the three grades included. The appropriateness is in the analogy of these inroads to those made by specific vocational training if this is introduced, since college preparation is in the nature of specialization for the group of pupils going on to higher levels of training. Concessions to specialization either in preparation for industry or for higher training should not too readily be made. This problem of respecting entrance requirements to college in junior-high-school years will be considered at greater length in Chapter V.

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The place of the separate prevocational school. The bearing of the performance of this function by the junior high school upon the justification of the establishment and continuance of the special prevocational school is unequivocal: while the failure to perform the work of the upper grades was sufficient vindication for the latter, the introduction of the former institution leaves its establishment or maintenance without defense. The concentration of pupils accompanying the introduction of the junior-high-school plan makes it possible to do, along the lines of preliminary vocational education, as much as, or more than, may be accomplished in a separate prevocational school, and this also under auspices strikingly more democratic.

THE DEMOCRATIZING FUNCTIONS OF THE JUNIOR HIGH SCHOOL

In concluding the discussion of the present chapter and before turning to a consideration of the remaining purposes of the junior high school, it will be well to direct attention briefly to the keynote that interrelates the five purposes which have up to this point come up for examination. This keynote is the *democratization* of education.

In the analysis of claims made on behalf of the junior high school and presented in the earlier portions of the chapter, the five which have so far been treated, namely, retention, economy of time, recognition of individual differences, exploration and guidance, and provision of the beginnings of vocational education, were allocated as subfunctions of the major function of realizing a democratic school system. Now that these subfunctions have been canvassed, the reasons for this allocation are probably apparent. Education can obviously not be democratized without keeping in school pupils who are now dropping out

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just as soon as the period of compulsory education is terminated while other pupils continue their training. Time must be economized by enrichment and otherwise so as to advance further into training beyond the mere fundamental processes those who are destined to leave school early. In this way progress will be made toward the equalization of educational opportunity. It is now a truism that this equalization of educational opportunity cannot be achieved without adjustment to individual differences. The performance of the function of exploration and guidance is necessary because without it we shall not be able to recognize the differences; we have already stated that one is a corollary to the other. Finally, democratization would not be complete without such occupationalization of training as may justifiably be introduced into education on this level for those whose stay in school must be cut short. While not every argument in support of these five functions emanates from the need of democratization, this relationship is one which knits them into unity and warrants designating them as the democratizing functions of the junior high school.

QUESTIONS AND PROBLEMS

1. Are all claims made on behalf of an educational institution to be accepted among its purposes?
2. What limitations would you place on the degree of popularization of junior-high-school education, or of secondary education as a whole? In other words, where and on what basis can a line be drawn?
3. Investigate the extent of retention and elimination for some school or school system, focusing attention on Grade V or Grade VI upward.
4. Prepare a list of factors of elimination from school. Conjecture as to the extent of overlapping of their influence.

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5. What are the difficulties in the way of comparing retention in junior and non-junior schools?

6. Secure data and chart the distributions of test scores in subjects other than those used as illustrations.

7. Why is it appropriate to regard sex, maturity, and selection as factors of variation in junior-high-school pupils, as well as the factors usually represented in discussions of variation, that is, heredity and environment?

8. Investigate by questionnaire the subject preferences of pupils in a junior high school.

9. Examine a number of courses of study for city school systems to note the extent of provision for reviews in seventh and eighth grades.

10. Place the methods of economizing time in the order of what seems to you to be their importance.

11. Is the function of exploration and guidance more or less difficult to perform in small communities than in large communities?

12. Why should not the prevocational school be continued in a system after the advent there of the junior high school?

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III

PECULIAR FUNCTIONS OF THE JUNIOR HIGH SCHOOL (CONTINUED)

RECOGNITION OF THE NATURE OF THE CHILD AT ADOLESCENCE¹

Nature of the claims. Of the purposes proposed on behalf of the junior high school as these were presented in Table I and Fig. 1 in Chapter II, the first five, classifiable as the democratizing functions, were considered in the foregoing chapter. It is left for the present chapter to scrutinize the remaining claims, as well as to bring the direct treatment of all the acceptable functions to a close, both by summarizing them and by discussing them in certain additional relationships the appreciation of which will be helpful in developing junior high schools along appropriate lines. Succeeding chapters will then take up one by one the features of the junior high school.

Recognizing the nature of the child at adolescence (claim II) is less frequently proposed as a peculiar function of reorganization than are all the preceding and at least two of the succeeding functions in Table I and Fig. 1. The mode of expression ranges from the very simple statement that the junior high school was "called into existence to provide an educational transition for the intermediate

¹ The reader will find a more extended treatment of adolescence in relation to secondary education in Chapter II of the author's "American Secondary School" (Ginn and Company, 1927).

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period between childhood and maturity" to the more rhetorical of which the following is representative:

It secures better adaptation of subject matter, methods, and discipline to the adolescent age. The pubescent, or early adolescent, period begins with most children at the age of twelve or thirteen. With this period come important changes in physical structure and function, with decided corresponding changes in mental development. The boy of twelve or thirteen is not what he was at nine or ten. His childhood may still be in sight, but he has rounded a corner [sic]; he has passed a new milestone of life; by fourteen or fifteen he has gone over a hill and left his childhood days and ways behind. (!)

On account of the controversial character of the field involved, it is impossible to present substantiation for this peculiar function which can win anything like universal acceptance. There is, nevertheless, enough evidence, obtained by the methods of science and of common observation, that borders on the indubitable to furnish broad grounds for urging fundamental changes in school organization.

Physical growth during adolescence. The most incontestable of this evidence concerns the physiological changes of oncoming maturity. The extent of these changes and their point of onset may be illustrated by reference to data pertaining to growth in stature. The average stature in inches for boys and girls from five and a half years of age and upward is shown in Table VI and Fig. 9. A first glance at the figure gives the impression of rather steady growth almost throughout the period of years represented. However, closer examination discloses certain significant accelerations. The first to arrive is for girls, which, by the age of eleven and a half years, gives them an excess of stature over boys, an excess maintained until after fourteen and a half years of age. At about this time the acceleration for

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boys gives them an excess over girls in respect to stature, which is thereafter maintained.

The accelerations in height are paralleled by notable increases in weight during the same periods (not shown here) and, according to Smedley,¹ by increases in breathing capacity.

TABLE VI. AVERAGE HEIGHT OF BOYS AND GIRLS IN CERTAIN
AMERICAN CITY SCHOOL SYSTEMS ²

APPROXIMATE AVERAGE AGE	AVERAGE IN INCHES	
	Boys	Girls
5.5	41.7	41.3
6.5	43.9	43.3
7.5	46.0	45.7
8.5	48.8	47.7
9.5	50.0	49.7
10.5	51.9	51.7
11.5	53.6	53.8
12.5	55.4	56.1
13.5	57.5	58.5
14.5	60.0	60.4
15.5	62.9	61.6
16.5	64.9	62.2
17.5	66.5	62.7
18.5	67.4	

For girls the increases in the respect last named are not so marked as they are for boys, nor do they continue through so long a period.

Attention should be called to the fact that the data used by the two investigators referred to are compilations of *single observations of large numbers of children at varying ages and not several measurements periodically for a number*

¹ F. W. Smedley, Report of the Department of Child Study and Pedagogic Investigation of the Chicago Public Schools, Vol. II (1900), pp. 10-48.

² Frederic L. Burk (citing from Franz Boas), "Growth of Children in Height and Weight," *American Journal of Psychology* (April, 1898), Vol. IX, p. 262.

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of years of the same individuals. Individual histories of the latter sort are now being reported¹ and they bear out the expectation of larger accelerations. It is now certain that such individual histories, if available in large numbers and synchronized from the point of onset of puberty, would show more striking increments than do the data reported.

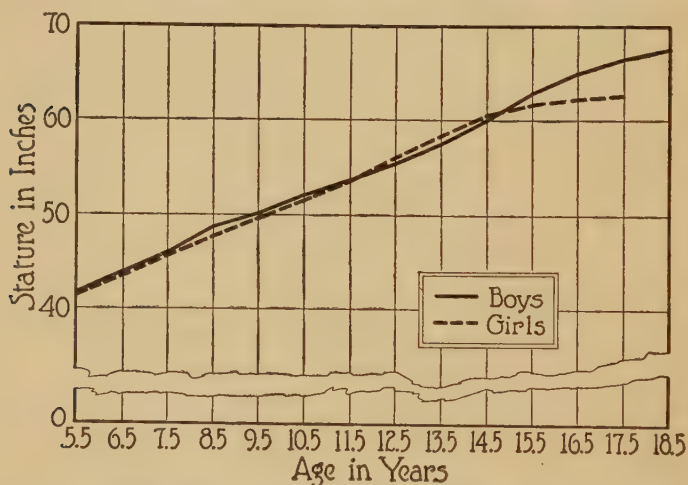


FIG. 9. Average height of boys and girls in certain city school systems (After Table VI)

The fact of variation by three or four years of this onset (as will be shown below) surely tends to level down the average increase.

A fact of physical change at adolescence probably not exceeded or even equaled in importance of influence by any other so far mentioned is the modification of the relative rates of growth of the heart and arteries. The measurements of Landois are frequently cited in this connection :

¹ Bird T. Baldwin, *The Physical Growth of Children from Birth to Maturity*, University of Iowa Studies in Child Welfare, Vol. I (1921), No. 1.

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the ratio of the size of the heart to the cross section of the arteries changes from 25 to 20 at birth, to 140 to 50 at puberty, and again to 290 to 61 at maturity. This augmented power of the heart results in an increased blood pressure which is accompanied and followed by growth in body tissues, the fact of which may be inferred from what has already been said, and by the more rapid development in sex and other organs whose complete functioning is characteristic of maturity. The body temperature rises to some extent (0.5° F.) during this period. It would be surprising indeed if this profound physical change were unaccompanied by changes in the emotional life of the child.

More recent thought, instanced by Moll and Freud, apprehends that the sex life of the child begins years before the first appearance of the external signs of puberty, but there are few who will take exception to the statement that there is a pulse of sex interest near the time of their appearance. As has been stated, these signs do not manifest themselves at identical chronological age points in the lives of all boys or of all girls. As our discussion concerns itself with adapting the organization of education to the changing nature of the child, the facts as to the percentages of boys and girls at each of the several ages who bear the signs of oncoming or arrived maturity are pertinent. They are presented here in tabular and diagrammatic form. Table VII and the upper half of Fig. 10 (adapted from Crampton) show that less than a fifth of the group of boys at twelve and a fourth years of age examined by him bore these signs, that for boys at twelve and three-fourths years this proportion was almost a third etc. Baldwin's data on girls (see Table VIII and the lower half of Fig. 10) show much larger percentages at approximately comparable ages. The disparity conforms in general to

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what has already been said about the differences between boys and girls as to the age at which the pronounced increments in height, in weight, and in lung capacity appear.

Any description of physical development during the period being considered must include, in addition to what

TABLE VII. PERCENTAGES OF 3825 BOYS (1) PREPUBESCENT, (2) PUBESCENT, (3) POSTPUBESCENT, (4) PUBESCENT AND POSTPUBESCENT (COMBINED) BY HALF-YEARS FROM TWELVE AND ONE-FOURTH TO SEVENTEEN AND THREE-FOURTHS YEARS OF AGE¹

AGE	PREPUBESCENT	PUBESCENT	POSTPUBESCENT	PUBESCENT AND POSTPUBESCENT
12.25	(81)	(16)	(2)	(18)
12.75	69	25	6	31
13.25	55	26	18	44
13.75	41	28	31	59
14.25	26	28	46	74
14.75	16	24	60	84
15.25	9	20	70	90
15.75	5	10	85	95
16.25	2	4	93	97
16.75	1	4	95	99
17.25		2	98	100
17.75			100	100

has already been mentioned, reference to the primary and secondary sex characteristics and to the endocrine glands.

First among the sex characteristics to be mentioned, perhaps, are the reproductive organs themselves. These manifest a notable increase in size and an accompanying internal development of the capacity to secrete the male and the female reproducing cells, respectively the spermatozoa and the ova. These organs are influential in bringing on the secondary sex characteristics. It is now that boys and girls become pubescent, experiencing the growth

¹ C. W. Crampton, "Physiological Age—A Fundamental Principle," *American Physical Education Review* (March, 1908), Vol. XIII, p. 150.

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of hair in pubic and axillary regions. Boys in addition develop a growth of hair on the face and often on the trunk as well. The body takes on the adult contour, and the voice, especially that of the boy, undergoes a marked change.

TABLE VIII. PERCENTAGES OF 1241 GIRLS (1) PREPUBESCENT, (2) PUBESCENT, (3) POSTPUBESCENT, AND (4) PUBESCENT AND POSTPUBESCENT (COMBINED) BY HALF-YEARS FROM TEN AND ONE-HALF TO SIXTEEN AND ONE-HALF YEARS OF AGE¹

AGE	PREPUBESCENT	PUBESCENT	POSTPUBESCENT	PUBESCENT AND POSTPUBESCENT
10.5	93.75	6.25	0.00	6.25
11.0	100.00	0.00	0.00	0.00
11.5	78.84	19.23	1.92	21.15
12.0	62.06	37.93	0.00	37.93
12.5	58.20	23.88	17.91	41.79
13.0	39.53	34.88	25.58	60.46
13.5	15.15	37.87	46.96	84.83
14.0	15.38	38.46	46.15	84.61
14.5	4.83	17.74	77.42	95.16
15.0	0.00	14.54	85.45	99.99
15.5	1.55	7.81	90.62	98.43
16.0	2.04	6.12	91.83	97.95
16.5	0.00	3.17	96.83	100.00

The endocrine glands (which produce internal secretions), other than the spermaries and ovaries, generally recognized by physiologists are the thyroid and the parathyroid in the neck, the suprarenals near the kidneys, the pineal and pituitary glands in the brain, and certain portions of the pancreas. The incretions produced contain the hormones, certain substances distributed to the body by blood and lymph. These hormones have marked influences on the growth and activities of various organs, the effects

¹ Bird T. Baldwin, "A Measuring Scale for Physical Growth and Physiological Age," Fifteenth Yearbook of the National Society for the Study of Education (1916), Part I, p. 17.

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of some of them being especially noticeable in the changes of adolescence in both boys and girls.

Physically, at least, *the individual undergoes pronounced changes in make-up in the shift from childhood to youth.* These changes range through growth in stature, weight, breathing capacity, the circulatory system, primary and secondary sex characteristics, functioning of the endocrine glands, and many other respects.

Mental development. The pronounced character of the physical development in this period is usually admitted without argument. It is when we turn from this to the evidences of change in the psychological nature of the child at adolescence that we move directly into the region of controversy. A factor which has tended to detract from the belief in profound psychic changes during this period has been the discrediting of the method of investigation by which the evidence presuming to establish them was collected by G. Stanley Hall and his school. Doubtless the indiscriminate use of the questionnaire method that was sometimes indulged in is not to be commended. It must, moreover, be conceded that unwarranted conclusions were sometimes drawn. Some of the theories propounded concerning the mental growth of the adolescent — and still entertained in some circles — are nothing short of bizarre and preposterous. On the other hand, it seems to the writer that it has been too readily assumed by some that discrediting this questionnaire method and denying the fact of pronounced mental change were accomplished by the same stroke of criticism. *A method of investigation may be discredited and the phenomena with which it is concerned still exist.* This criticism is ventured, not in order to win easy acceptance for extravagant concepts of mental change from childhood to youth, but to urge consideration of the question without undue bias in either direction.

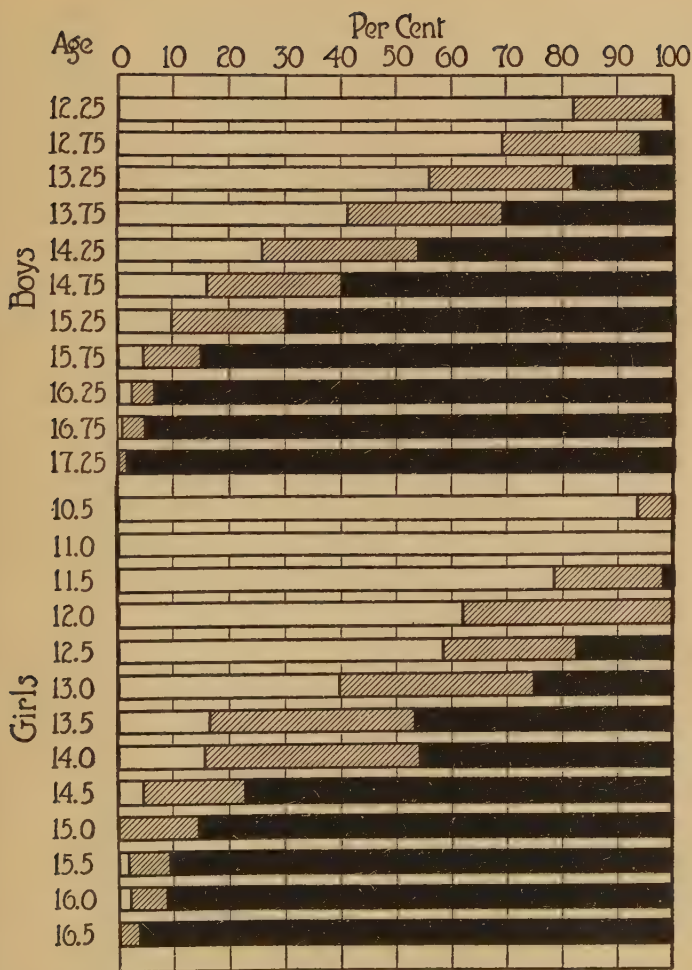


FIG. 10. Percentages of boys and girls prepubescent, pubescent, and postpubescent at each age. (After Tables VII and VIII.) (In outline, prepubescent; shaded, pubescent; black, postpubescent)

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Such treatment as is given this subject of mental change in progress from childhood to youth may be most satisfactorily accomplished by considering mental life in two aspects: development in *knowing*, and development in *feeling*.

1. *Knowing*. Most of the measurements of mental traits which we have are in the former, or cognitive, phases; for example, in the more tangible processes, such as sensation, association, memory, reasoning, and the like. From such measurements the usual conclusion drawn is that growth in intelligence is gradual and not in harmony with the adolescent accelerations in physical development.

Probably we are not far wrong in concluding from most of these investigations that development in this respect *is* gradual. Certain recent studies, however, have shaken this conclusion to some extent. One of these was made by Murdock and Sullivan, some of the data presented by these investigators being reproduced in Table IX. They relate to almost six hundred boys and girls, children of American and British parents, attending a private school in Honolulu. They show excesses in the intelligence quotient for boys and for girls during almost identical periods in which there are excesses in average weight and in average stature. The writers are conservative in the conclusions drawn, since they assume nothing about the amount of the adolescent acceleration, "except that it is much smaller, comparatively, than the physical spurt. . . . Since . . . changes in mental growth are concealed, rather than shown up, by the use of mental scales, it is impossible for us to arrive at a decision as to the amount of adolescent growth acceleration."¹ They point out also that their results

¹ Katherine Murdock and Louis R. Sullivan, "Some Evidence of an Adolescent Increase in the Rate of Mental Growth," *Journal of Educational Psychology* (September, 1922), Vol. XIII, p. 354.

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seem to be in harmony with those of other investigators, quoting Terman as reporting a sex difference in mentality which is in favor of girls before fourteen and in favor of boys thereafter. Although the differences are not large and while they appear to be quantitative rather than qualitative (as was formerly advocated), it is a significant fact

TABLE IX. SEX DIFFERENCES AT EACH YEAR OF AGE IN AVERAGE WEIGHTS, HEIGHTS, AND INTELLIGENCE QUOTIENTS OF PUPILS¹

AGE	AVERAGE EXCESS IN WEIGHT (POUNDS)		AVERAGE EXCESS IN STATURE (CENTIMETERS)		AVERAGE EXCESS IN I. Q.		AVERAGE EXCESS IN I. Q. (SMOOTHED)	
	Girls over Boys	Boys over Girls	Girls over Boys	Boys over Girls	Girls over Boys	Boys over Girls	Girls over Boys	Boys over Girls
6		2		2		4.2		
7		3		3		5.0		2.2
8	1			1	3.5		2.0	
9	5		3		7.3		6.3	
10	7		6		10.6		5.7	
11	8		4		0.0		4.9	
12	5		1		4.2		1.2	
13	14		5			0.2	1.0	
14	1			3		0.4		2.0
15		11		7		4.9		1.7
16		12		9	0.8			2.6
17		13		10		2.9		0.1
18		18		10	2.4			

that these mental accelerations are contemporary with those along physical lines as previously described.

2. *Feeling.* The quickening of social consciousness which accompanies the arrival of sex maturity is so much a matter of almost universal observation as to leave little doubt in the minds of many thoughtful persons of its estab-

¹ Katherine Murdock and Louis R. Sullivan, "Some Evidence of an Adolescent Increase in the Rate of Mental Growth," *Journal of Educational Psychology* (September, 1922), Vol. XIII, pp. 357-362.

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ishment as a fact. It will be attested to by most intelligent teachers and others who have opportunities to compare the natures of groups of adolescents and of preadolescents. It is no doubt not to be wholly accounted for by the mere approach or arrival of sex maturity. Few will deny that it could hardly attain its pervasive character without the support of other social instincts ; for example, the maternal instinct, gregariousness, and the desire for approval and "showing off." These, like the sex instinct, are more or less operative before the period of adolescence. It must be encouraged as well by the suggestions of adult society, which, of course, find a soil more fertile because of sheer approximation of the youth to adulthood in stature and appearance, and also by the rapid accumulation of experiences. Whatever may be the complex of causes that are urging the quickening of the social consciousness, there can be little doubt of its existence in the early adolescent, and there can be little question that it is accelerated by the extensive physiological changes some of which have been mentioned.

Even in such a brief treatment of the nature of psychic changes as is here attempted it is essential to accord some attention to the increased interest of the adolescent in matters *religious*. This can best be done by means of a quotation from Pechstein and McGregor, who rightly see this as a phase of the social interest : ¹

In the development of adolescent personality — the total potentiality of response an individual possesses for meeting life situations — the religious aspect plays a prominent rôle. Lancaster, Starbuck, Coe, Hall, and others have shown that, if the statistics of conversion be plotted, the curve rises irregularly through the early teens, reaches its highest point at sixteen,

¹ Louis A. Pechstein and A. Laura McGregor, *Psychology of the Junior High School Pupil*, pp. 149-150. Houghton Mifflin Company, 1924.

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then falls irregularly toward maturity. Furthermore, Lancaster reports that experiencing a religious crisis akin to conversion is almost universal. . . .

The causes for the rapid development of the religious personality are not far to seek, as they do not take the psychologist away from his general thesis that all the determinants of action are within the individual. . . . This postulates no specific instinct of religion coming into play at adolescence or any other life period, nor does it give place for registering the touch of the Divine considered so fundamental in certain theological systems. Rather, with gradual accumulations of experience; the maturing of the sexual and social instincts and their attendant emotions; the often described readjustment process toward life; the necessary transition from egoism to altruism, developing the heliocentric (social) attitude in rivalry to the fairly egocentric (individual) attitude; and finally, as a natural result of securing all sorts of conditioned ways of responding and perhaps the development of "escape mechanisms," the adolescent often becomes "converted"; that is, he definitely decides *to turn from* the older moorings of self-love and self-interests and even sin, and seeks to revamp his life in keeping with the conventionalized pattern set by formulated religion and approved by the older members of the social group.

Before leaving the feeling phase of psychic development, mention should be made of disturbances like dementia præcox, hysteria, phobias, automatisms, and the like. These, while happily far from typical of this period of growth, have an incidence sufficiently large to justify looking upon adolescence to some extent as a period of "storm and stress" and to urge us to adapt the educational régime to the requirements of psychic normality. It is likewise appropriate to call attention here to certain materials quoted from Olson in a section dealing with disciplinary and social guidance in the earlier portion of Chapter XI. These tendencies show marked increments for the earlier years of adolescence.

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The grade incidence of early adolescence. With adolescence established as a period of pronounced physical change, of — probably — some acceleration, although not profound, in cognition, and of significant changes in the feeling phase of mental life, the educational question turns on the grades of the school system in which pupils are when the changes take place. It was Inglis who first

TABLE X. PERCENTAGES OF PUBESCENT AND POSTPUBESCENT PUPILS (COMBINED) IN THE VARIOUS GRADES OF THE PATERSON, NEW JERSEY, SCHOOLS, NOVEMBER, 1913¹

GRADE	BOYS	GIRLS	BOTH
1	0	0	0
2	1	1	1
3	3	4	3
4	8	11	10
5	19	26	22
6	31	42	36
7	44	64	54
8	65	82	74
I	78	90	83
II	88	97	92
III	97	100	98
IV	99	100	100

canvassed this problem as it relates to junior-high-school reorganization. In an article in the *School Review* he set forth a method, given the ages, of estimating the percentages in each grade who are prepubescent, pubescent, and postpubescent.² Subsequently, in "Principles of Secondary Education," he reported illustratively these percentages for one school system, that of Paterson, New Jersey.³ A part of these are shown in Table X and Fig. 11. The writer

¹ Alexander J. Inglis, *Principles of Secondary Education*, p. 28. Houghton Mifflin Company, 1918.

² Alexander J. Inglis, "A Fundamental Problem in the Reorganization in the High School," *School Review* (May, 1915), Vol. XXIII, pp. 307-318.

³ Alexander J. Inglis, *Principles of Secondary Education*, pp. 27-32.

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has made and reported similar computations for the age-grade distribution in a number of the smaller systems of Minnesota, with results different chiefly in the smaller percentages of pubescent and postpubescent in Grades V,

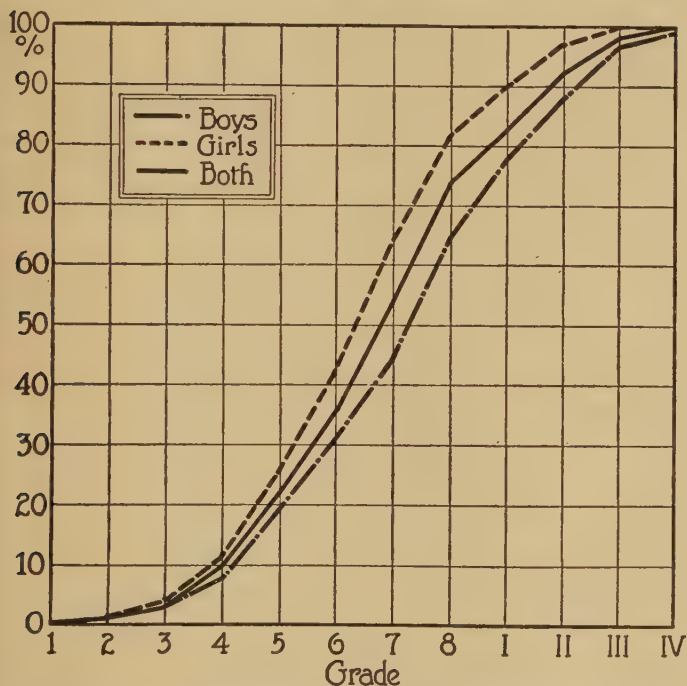


FIG. 11. Estimated percentages of boys, girls, and all pupils pubescent and postpubescent (combined) for each grade. (After Table X)

VI, VII, and VIII. He has also made computations for larger systems, with results similar to those of Inglis.

In the latter computations the proportions of pubescent and postpubescent boys found in the seventh grade ranged from two fifths, or slightly less, to a half of all boys enrolled, while for girls they ranged from three fifths to seven tenths.

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In the ninth grade the range was from seven tenths to four fifths for boys and from six sevenths to ten elevenths for girls. Several significant conclusions may be drawn from these data, but perhaps the most significant for present purposes is that if, because of the profound changes taking place at adolescence, the period of secondary education is to coincide with the period of adolescence, the *four-year high school begins too late, and the plan which begins secondary education two years earlier is a much better adjustment.*

TABLE XI. NUMERICAL AND PERCENTAGE DISTRIBUTION BY AGE OF 14,594 PUPILS ENROLLED IN GRADES VII, VIII, AND IX IN THE MINNEAPOLIS SCHOOLS, 1923-1924¹

AGE	NUMBER	PER CENT	AGE	NUMBER	PER CENT
9½	1	0.0	14	2154	14.8
10	4	0.0	14½	1962	13.4
10½	33	0.2	15	1574	10.8
11	143	1.0	15½	838	5.7
11½	534	3.7	16	535	3.7
12	938	6.4	16½	201	1.7
12½	1617	11.1	17	90	0.6
13	1757	12.0	17½	29	0.2
13½	2151	14.7	18	33	0.2

It gives point to this conclusion to show, as is done in Table XI and Fig. 12, the distribution by ages of pupils enrolled in junior-high-school grades. It is seen that no large proportion of 14,594 pupils enrolled in Grades VII, VIII, and IX of the Minneapolis system in 1923-1924 fall outside the age limits of 12 to 16 years, which, by the standard method of tabulating ages, means from 11 years 9 months, to 16 years 3 months. In fact, only 4.9 per cent of these pupils are younger and but 2.7 per cent are older than the age groups thus included.

¹ Computed from data presented in J. Orin Powers's "Instructional Outcomes in Junior High Schools" (University of Minnesota Press, 1927).

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Implications of these changes for junior-high-school reorganization. Despite the fact that the changes that have been described come rather rapidly and powerfully, there is slight justification for making *sudden* changes in school

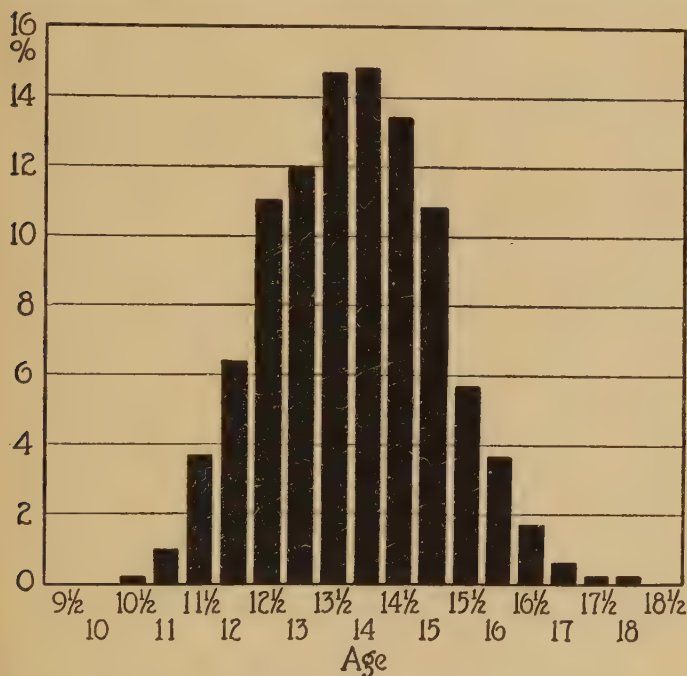


FIG. 12. Percentage distribution by age of pupils enrolled in Grades VII, VIII, and IX in the Minneapolis schools

organization aiming at harmony with the nature of the child. This is because the change is not cataclysmic in any event, because it does not arrive at identical chronological ages for the two sexes nor for those of the same sex, and because pupils of the same physiological maturity do not reach the seventh grade at the same time.

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Nevertheless, the school reforms calculated to be better adapted to the changed nature of the child at adolescence must be little short of *far-reaching*. They must include a physical education that takes cognizance of the differences in physique between boys and girls and of the rapidly increasing strength of the former. They may not ignore the opportuneness at this time of sex education. They must recognize the fact that the pupil, now rapidly approaching maturity, will become increasingly impatient unless given a meatier mental diet than is provided in the conventional school — that his enlarging social consciousness will be better satisfied by the materials of a functional education rich in social, civic, and vocational interests than by the repetition of the preliminaries of an education. Nor can they neglect to provide opportunities of participation in a well-planned and efficiently directed social organization of the school that will allow for expression of the pupil's social impulses. They must not ignore adolescence as a period for moral guidance and inspiration. As most of these reforms are next to impossible in the traditional organization, we must look to the junior high school to bring them and thus to perform the function of recognizing the nature of the adolescent child.

PROVISION OF THE CONDITIONS FOR BETTER TEACHING

The nature of the statements made. Providing the conditions for better teaching (claim III) may be seen in Table I and Fig. 1 to assume large importance in the minds of those who prepared both groups of statements introduced in the tabulations. There is little variation in the statements made from references to (1) improvement of instruction resulting from the specialization on the part of teachers which is made possible through departmentaliza-

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tion of instruction in the junior high school and (2) the fact that this reorganization can attract to the seventh and eighth grades teachers of more extended training than can the elementary school. Illustrative quotations from references to the former advantage are: "teachers [may be secured] who are trained in the subjects they will teach"; "the teaching is better done, since no teacher is able to teach a half-dozen subjects unrelated for the most part as well as he can teach subjects of his choice"; the junior high school "permits the teacher to come before his class with the enthusiasm and inspiration of a specialist." Quotations touching on the latter advantage are: it will be "easier to secure high-grade teachers, both men and women, than it is to get them for the grades"; "this organization will produce a demand for specially qualified teachers."

Sustaining the claim. The proportion of those giving careful consideration to the problems of school organization who are still hoping to secure effective teaching under the one-teacher regimen in the upper grades is rapidly diminishing. Even after years of trial of the plan in which a single teacher endeavors to give good instruction in a wide variety of subjects, we must admit that it is not often that we meet with a teacher of seventh or eighth grade who may be said to be effective in all the work which she is called upon to teach. The long list of subjects itself is disheartening. The onerous nature of the task has been forcibly stated by Sallie Hill, one-time president of the League of Teachers' Associations, although to a purpose different from the present one:¹

Do you ever permit yourselves to forget the recitations one teacher in the elementary grades is expected to hear — I cannot say teach — in one day? For fear you can't recall them, let me

¹ *Bulletin No. 4* (June, 1919), pp. 9-10, League of Teachers' Associations.

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remind you of the subjects, both the supervised and unsupervised, in which she must be proficient and show enthusiastic interest — arithmetic, geography, history, civics, oral and written language and what technical grammar she dares introduce, spelling, phonics, reading, memory work, literature, nature study, use of dictionary, courtesy, how and where to find current topics, gymnastics, drawing, music, and sewing, with an occasional competitive composition thrown in for good measure. Could you do it? Neither can we.

The task has been growing more complex and correspondingly more discouraging with the addition of each new subject, ever since we began to branch out from the original three R's. Moreover, school authorities have been obliged to content themselves with teachers for this work who have had as much as two years of training after high-school graduation.

The enrichment of the curriculum has made the work of teaching all the subjects in the elementary grades so large an undertaking that many systems have despaired of making the one-teacher regimen suffice and have long since introduced partial or complete departmentalization into the upper and intermediate grades — sometimes even in the primary grades. There is a tendency to departmentalize more frequently in the upper grades than in grades below them, thus reflecting the need for superior scholarship in subjects in the grades enrolling the more advanced pupils.

The advantages associated with departmentalization and with the better training of the teacher are more likely to come with the junior high school than with mere departmentalization of the upper grades, because the program of the former is enlarged by the addition of subjects for the teaching of which the preparation of the usual elementary-school teacher does not at all prepare

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him. Securing teachers with more training will be encouraged also by the tradition of the more honorific character of teaching in the high school which will attach in some part to the junior high school. This will be especially operative if the salary schedule for the latter approaches that for the former. It is certain that reorganization of school systems in the smaller communities will bring more highly trained teachers, who are specialists in subjects, into the seventh and eighth grades, since the teachers in the senior-high-school grades will teach these subjects in the grades of the junior high school. This is an important ground for reorganization in smaller communities.

An additional consideration argues for the conditions of better teaching in the junior high school — the vertical correlation that will follow departmentalization. Under the present organization the teacher of the eighth grade is not fully aware of what is being taught and what methods are being used in a given subject in the seventh grade. The teacher in the ninth grade is even more ignorant of what has gone forward in his related subjects in the eighth grade. Unlike this situation will be that in the reorganized school, where the teacher will often carry his subject through two, three, and, in small communities, more years.

It must be granted that too great confidence may easily be placed in departmentalization and more extended training as being themselves active in improving teaching. The best that may be demanded of them is that they provide the *conditions under which the work of instruction may be given latitude to improve*. The ultimate test of the realization of better teaching will not be whether our teachers have attended school longer or are teaching fewer subjects, but whether the process and product of instruction are superior to what is typical of the traditional organization. Although at present there is little or no indisputable

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published evidence affirming or denying the improvement, it is manifest that school authorities rest in the assurance that improvement will follow.

The two means most often advocated as influential in providing conditions for better teaching — departmentalization and more extended preparation of teachers — are dealt with at greater length in Chapters IX and XIII, respectively.

SECURING BETTER SCHOLARSHIP

Preliminary scrutiny of the claim. A relatively small proportion of those who prepared the statements used in the tabulation mention the possibility of *securing better scholarship* (claim IV) on the part of the pupil (see Table I and Fig. 1 on pages 17 and 19). The hope centers in "study under supervision," "reduction of the number of failures," "the elimination of indifference toward the work" prevalent under the traditional organization, and the pursuit of some subjects through a longer period as a consequence of the downward extension of the secondary school.

Judging from the discussion of the peculiar function immediately preceding, as just concluded, this expectation of better scholarship should hinge to some extent upon the tendency of the junior high school to supply the conditions for better teaching. This inference is one merely from cause to effect: if more efficient instruction is provided a superior scholarship must result.

This expectation has the additional support of the fact that supervised study, an increasingly common feature of the junior high school, has been found to reduce the proportion of failures in high-school classes and otherwise to raise the standard of scholarship.

But advocates of the junior high school contend that

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better scholarship must follow also the changed attitudes of the pupil brought by other features of reorganization. Among the most important of these is the zest that comes from the study of new and more vital subjects and materials as contrasted with the present widespread indifference of pupils in upper grades toward the too frequent spiritless reviews and extensions of the fundamentals. This zest is heightened also by the opportunity given in most junior high schools for the election of courses in line with pupils' interests and attitudes. At the same time the privilege of election and other features of reorganization give them the sense of being agents in their own education.

A summary of evaluative investigations. 1. *Stetson's study.* Since scholarship — efficient pupil performance — is and should be a matter of vital concern in any school, it is not surprising that a number of efforts should already have been made to evaluate this claim on behalf of the junior high school. Four of these will be referred to here, those of Stetson, Childs, Powers, and Porter. The first three concern scholastic efficiency *within* junior-high-school grades, the fourth subsequent success in senior-high-school grades. Stetson has presented a study purporting to show that the scholarship as measured by the scholastic records of pupils who had attended the junior high schools in Grand Rapids, Michigan, was scarcely appreciably different from that of pupils who had attended schools having the conventional organization of the seventh, eighth, and ninth grades.¹ This was true in junior-high-school and senior-high-school grades and for the records in both English and mathematics. But he admits that the curricula in these subjects were practically identical for

¹ P. C. Stetson, "A Statistical Study of the Scholastic Records of 404 Junior and Non-Junior High-School Students," *School Review* (November, 1917), Vol. XXV, pp. 617-636.

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both types of school, junior and non-junior. The report of the school survey of Grand Rapids supplied further evidence that the reorganization was far from sufficient to bring about much improvement of the sort anticipated. It said, "The six-year high school as it is in operation in the city today is not fully such a school — if by the expression is meant . . . not only a change in the *form* of school organization, but also a pretty complete modification of the *subject matter* to be taught, the *methods of instruction* used, the *mode of administration* employed and the *spirit of control and direction that dominates.*"¹ Surely, little improvement in scholarship may be expected without genuine reorganization.

2. *A comparison by Childs.* Childs investigated, by the use of standard tests, the ability in certain fundamentals of pupils in the eighth grades of reorganized and of conventional schools.² His data tend to show that, in spite of the reduction in the amount of time devoted to these fundamentals in the former, the quality of achievement was approximately equal. However, little dependence may be placed in the findings of the study because of the small number of pupils and schools included in the study and the presence of a number of uncontrolled factors. Among the latter are the character of the training given to the pupils in grades preceding the eighth and the absence of a concept of a standard junior high school, to which reference was made in discussing retention in Chapter II. The small amount of assurance that may be had from it is in some degree increased by the knowledge that, as is shown elsewhere in his study, the junior high school tends to hold boys better than does the merely departmental organiza-

¹ School Survey, Grand Rapids, Michigan, p. 215.

² H. G. Childs, *An Investigation of Certain Phases of the Reorganization Movement in the Grammar Grades of Indiana Public Schools*, pp. 122-134.

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tion. Since it is the boys who are to a larger extent eliminated in the more nearly traditional organization, and since the average scholarship of those eliminated is lower than that of those who remain, figures which seem to show approximate equality in scholarship in junior and in non-junior schools may actually signify superiority in securing better scholarship of the individual pupil.

3. *Powers's study.* By far the most illuminating evaluation of the new organization on the score of the scholarship of its pupils made up to the present is one by J. Orin Powers, involving a comparison in a number of respects of the junior and non-junior schools of Minneapolis.¹ Some of the materials of this investigation have already been drawn upon in other connections in the foregoing chapter. It was fortunate for the prosecution of this comparative study that, although the system represented had for some years been at work establishing junior high schools, a large number of pupils — somewhat less than half of all in Grades VII, VIII, and IX — were still at the time of gathering the data being served by schools operating on the 8-4 plan. The evaluative comparison was effected by the utilization of a variety of methods, those here pertinent being explained as the findings are presented.

For the purposes of the study the schools represented were grouped in several ways. There were five (1) *junior high schools* in the sense of separate three-year units. Among these were what Powers designated, because they were established before the others, three (2) *old junior high schools*. There were also the junior-high-school grades in two (3) *junior-senior high schools*. Types (1) and (3) were combined to make up (4) *all junior high schools*. Lastly, there were the (5) *non-junior schools*, comprising the

¹ J. Orin Powers, *Instructional Outcomes in Junior High Schools*, chaps. ii and vi. University of Minnesota Press, 1927.

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seventh and eighth grades in departmental schools and the ninth grade in four-year high schools.

The first three comparisons of these groups are with respect to the efficiency of pupils in Grade VIII A¹ in three subject fields, namely, reading, arithmetic, and American history, as measured by objective tests. The particular tests used were, respectively, the Thorndike-McCall Reading Scale (Form I), the Buckingham Scale for Problems in Arithmetic (Third Division, Form I), and the Gregory Test in American History (Test III, Form B). The results for the second semester of the eighth grade are shown in order to compare performance of pupils in the two types of schools after approximately two years of attendance in them. The comparison is made by resort to what is known as the percentile graph, which is drawn so as to facilitate the noting of differences among the groups of pupils. The fact that the fifty percentile is at the same time the median makes it possible also to use this measure in the comparison. The scores of between nineteen hundred and two thousand pupils are represented in each of the three subjects, with not far from an equal division of pupils as between junior and non-junior groups.

The comparison for *reading* (Fig. 13) finds all junior groups excepting the junior-senior, which included the smallest number of pupils, below the non-junior group. The old junior group is lowest, with the junior group next above it. The ranking of the groups for arithmetic (Fig. 14) is somewhat shifted from that just shown, but it finds the non-junior group rather notably superior to all the junior groups, with the old junior group again near the lowest rank. In history also (Fig. 15) the non-junior group is clearly superior, and the junior groups are closely clustered with rather similar distributions of scores.

¹ In the Minneapolis system "A" refers to second-semester divisions.

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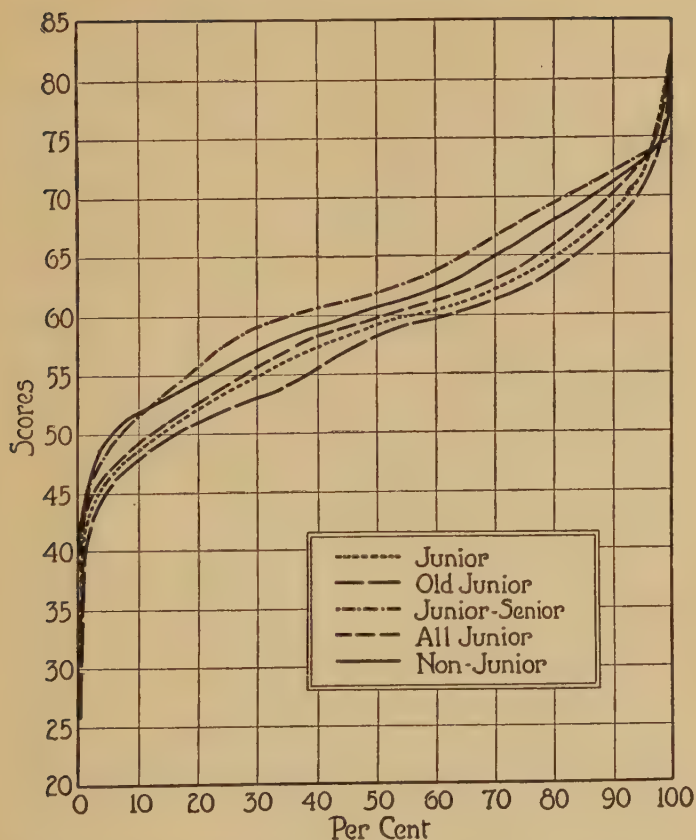


FIG. 13. Percentile distributions of scores on the Thorndike-McCall Reading Scale of junior and non-junior groups of pupils in Grade VIII A, Minneapolis

There can be no doubt of the superiority of performance in these common branches of the non-junior group. But the complete story is far from told in these direct comparisons of scores on tests in the common branches. Being

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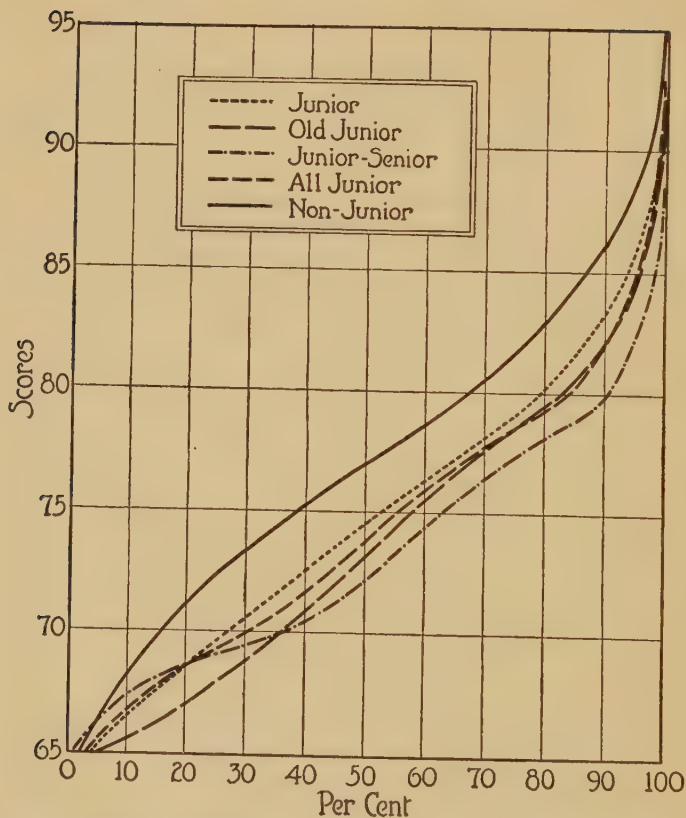


FIG. 14. Percentile distributions of scores on the Buckingham Arithmetic Scale of junior and non-junior groups of pupils in Grade VIII A, Minneapolis

aware of the need of control of all possible variable factors in the comparison, Powers included in his complete investigation inquiry along a number of related lines, the findings of only a few of which can be illustrated here. One of these was a comparison of the mentality of these

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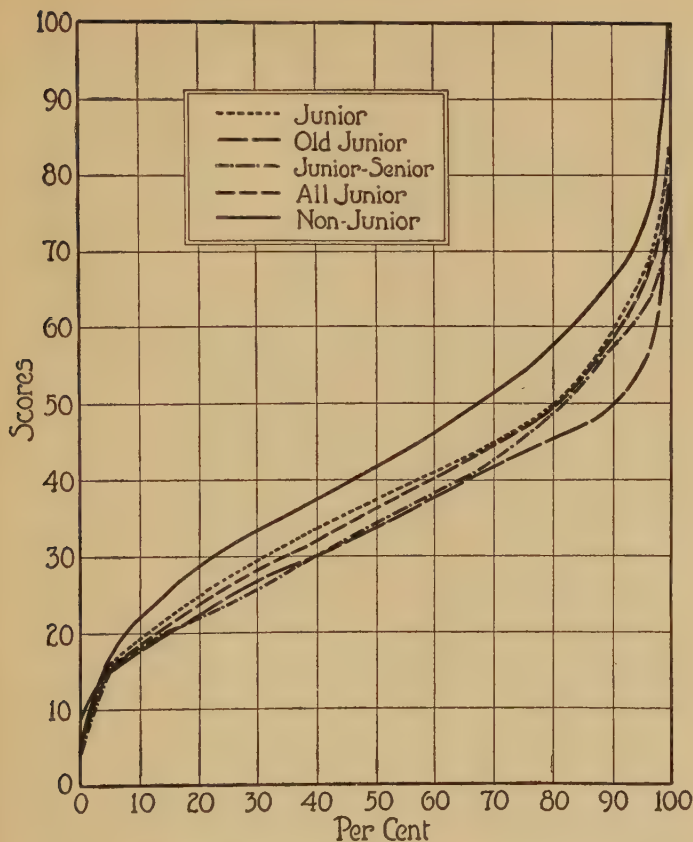


FIG. 15. Percentile distributions of scores on the Gregory Test in American History of junior and non-junior pupils of Grade VIII A, Minneapolis

junior and non-junior groups as shown in intelligence quotients. This comparison is made in the percentile distributions of Fig. 16, and finds the non-junior group again superior to the junior groups. This superiority goes far to

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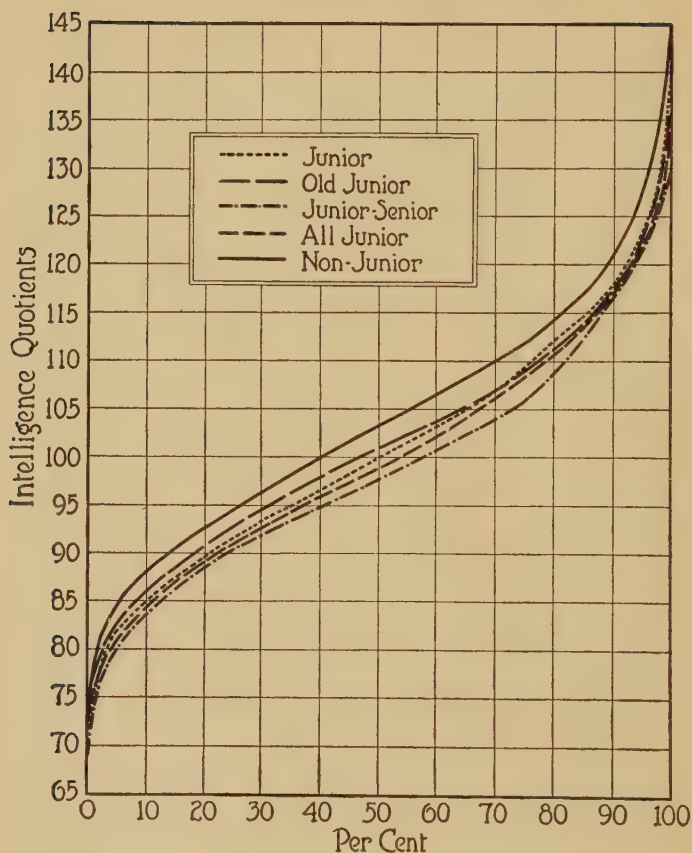


FIG. 16. Percentile distributions of intelligence quotients (using Terman Group Test of mental ability) of junior and non-junior groups of pupils in Grade VIII A, Minneapolis

explain the relative position of the junior and non-junior groups in the percentile distributions in the common branches as just shown.

Powers has shown this tendency to intellectual superi-

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ority in another way, that of percentage distributions by ability ratings. The method of distributing the pupils by these ratings is one devised by Professor W. S. Miller of the University of Minnesota.¹ Space cannot be spared here for describing this method in detail, but it may be said that it takes into account mental age and intelligence quotient. The ratings are A, B, C, D, and E; A

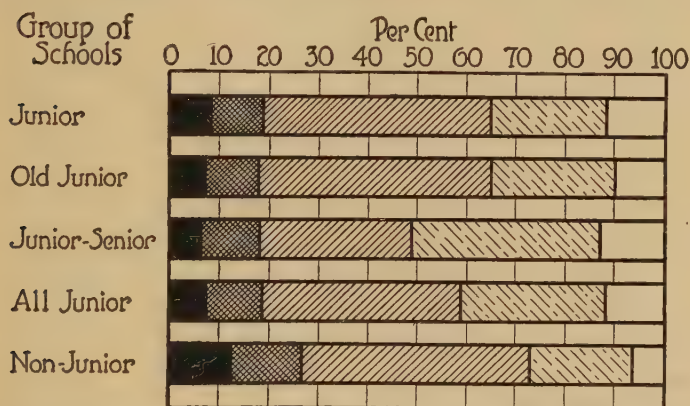


FIG. 17. Percentage distribution by ability ratings of pupils in junior and non-junior schools in Grade VIII A, Minneapolis. (Black, A rating; crosshatching, B rating; single hatching, C rating; broken hatching, D rating; in outline, E rating)

including the group highest in ability, and E the lowest. The percentages are shown in Fig. 17. The proportions in the A and B ratings in the junior groups are seen to be uniformly smaller than in the non-junior groups, and the D and E groups uniformly larger. These data, like those on intelligence quotients, do much to explain the superiority of the non-junior groups in the common branches.

¹ W. S. Miller, "The Classification of 6 A Pupils into Ability Groups," Proceedings of the Second Annual Conference of the Minnesota Society for the Study of Education (1925), pp. 14-25.

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When the question turns to explaining the *mental* superiority of the non-junior group, several types of evidence are at hand, but two only will be cited. The first refers to the economic levels represented in the sections of the city being served by junior and non-junior schools. In effecting junior-high-school organization in Minneapolis the first units were for the most part established in the less well-to-do sections. From what we know of mental differences among economic levels, whatever may be the cause, some measure of superiority obtains for the more well-to-do. The second explanation is the difference between junior and non-junior schools in rates of promotion and failure. Powers shows elsewhere in his complete report a fact which is in harmony with the democratizing functions of the new organization, that the rates of failure of promotion and of failure in subjects are strikingly smaller in junior than in non-junior groups. Such a difference in policy would result in the more regular advance through the grades of those of less ability, thus lowering the percentile distributions in performance both in tests in the common branches and in tests of intelligence. This less selective policy of the reorganized school was discussed in the foregoing chapter.

None of the comparisons so far reported is, however, of such a nature as to make clear whether or not the junior-high-school reorganization in Minneapolis is securing the superior performance by the pupil as gauged by his ability which is what should be implicit in the claim here under investigation. To answer this question more directly, Powers took recourse to the computation of the "achievement quotient," a measure which endeavors to relate the performance on the tests in the school subjects to the intelligence of the pupils. It is, in effect, a measure of how well the pupils are performing up to capacity. Performance at

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capacity is indicated by a quotient of 100, with performance better or poorer by quotients, respectively, above or below 100. For a random sample of pupils of the different ability ratings in Grade VIII A, he found achievement quotients in reading and arithmetic as shown in Table XII. Examining first the column of figures at the extreme right, one finds that the median accomplishment quotient in

TABLE XII. MEDIAN ACHIEVEMENT QUOTIENTS IN READING AND ARITHMETIC OF PUPILS IN GRADE VIII A IN JUNIOR AND NON-JUNIOR SCHOOLS OF MINNEAPOLIS ¹

SUBJECTS AND GROUPS OF PUPILS	ABILITY RATINGS					TOTAL
	A	B	C	D	E	
Reading						
Junior	92.5	103.5	104.4	106.8	110.8	105.2
Non-junior	93.8	98.3	100.6	105.0	106.5	101.4
Arithmetic						
Junior	89.5	97.3	100.0	104.3	105.4	101.2
Non-junior	89.2	94.6	98.9	103.1	108.3	100.0

junior schools is higher for both subjects, the difference for reading being the more apparent. With only two exceptions, the median quotients for the several ability ratings are higher for the junior groups, a consistency of some significance for the claim considered, even though the differences are not always large. Neither type of organization appears to be spurring the superior pupils (in the A rating) to perform up to capacity, a fact in harmony with conditions too commonly found in schools on many levels.

These differences in the achievement quotient in favor of the junior high school do not rise to the proportions one may be led to infer from the nature of the claim of superior scholarship made. But it must be borne in mind that this

¹ J. Orin Powers, *Instructional Outcomes in Junior High Schools*, chap. ii. University of Minnesota Press, 1927.

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institution has been set up to accomplish *much more than better performance in the common-school branches*, which is the only phase of improved scholarship through junior-high-school reorganization to which the findings cited are applicable. Even if it were shown that the better junior high schools secure no higher performance in relation to ability in these common branches than do schools in the conventional organization, the claim of greater accomplishment would still be justified. There would still be such evidence in support of the claim as is given in the percentage distributions of pupil's class time, which — in such better junior high schools — show contact with subjects and content within subjects not made available in the same grades of the 8-4 plan. To this could readily be added a number of other advantages implicit in the remaining functions canvassed in this and the foregoing chapters. The concluding comment on this claim as it concerns scholastic performance during junior-high-school years may well be that, although it is an acceptable special purpose of reorganization, there is some danger of conceiving it so narrowly and pressing for its performance so singly that the achievement of other important purposes, notably the democratizing functions, would be defeated.

4. *A study of success in senior-high-school grades.* The last study of scholastic success to be considered here is one made by Porter, comparing the efficiency in senior-high-school grades as measured by school marks of (1) pupils who had completed the work of Grades VII, VIII, and IX in junior high schools, and (2) pupils who had done their work of these grades in schools conventionally organized.¹

¹ William A. Porter, *A Comparative Study of Scholastic Achievements made by Junior and Non-Junior High-School Pupils in Minneapolis*, a master's thesis on file in the Graduate School of the University of Minnesota, 1924. Part I of this thesis used the method of computing accomplishment quotients. It is from Part II that the present material is drawn.

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The records of two hundred pupils subsequently attending the same high school are represented in the comparison, a hundred in each of the two groups. What is termed the junior-high-school group included all who had previously attended a junior high school in the same general section of the city and who had continued at least through the

TABLE XIII. MEDIAN MARKS IN SUBJECTS TAKEN IN GRADES X, XI, AND XII OF THE SAME HIGH SCHOOL BY (1) PUPILS WHO HAD COMPLETED THE WORK OF GRADES VII, VIII, AND IX IN JUNIOR HIGH SCHOOL, AND (2) PUPILS WHO HAD DONE THE WORK OF THESE GRADES IN SCHOOLS CONVENTIONALLY ORGANIZED

SUBJECT OR SUBJECT GROUP	GRADE X		GRADE XI		GRADE XII ¹	
	Junior	Non-Junior	Junior	Non-Junior	Junior	Non-Junior
English	81.3	81.6	82.8	83.9	81.7	80.9
Mathematics . . .	77.7	81.0	79.5	83.0	96.3	80.0
History	80.0	83.0	80.4	80.4	81.7	80.0
Latin	83.0	78.6	86.2	91.3	85.0	90.0
Foreign language .	82.7	84.3	86.7	86.8	88.8	85.8
Science	82.8	83.7	82.6	83.0	80.0	82.2

eleventh grade. There happened to be an even hundred of these. To be fair in selecting a sample from those who had attended schools conventionally organized, of whom there were more than a hundred, the first permanent record card alphabetically following each card for the junior-high-school group was chosen.

The median marks for the two groups in the academic subjects represented in the study are reported in Table XIII. The general conclusion is one of approximate equality of success of the two groups as measured by school marks, at least during the tenth and eleventh grades. The only sub-

¹ Except for English, the marks for subjects taken in Grade XII are so few as to raise the question of the validity of comparing the medians computed from them.

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jects in which there are notable differences in these grades are mathematics, in which the non-junior group has the advantage throughout, and Latin, in which honors are divided, superiority being with the junior group in the tenth grade and with the non-junior group in the eleventh grade. The medians in the twelfth grade are for the most part favorable to the junior group, but little dependence is to be placed on comparisons in subjects other than English in this grade, on account of the relatively small number of marks represented. The results of the study suggest that despite the lower proportion of failures in junior-high-school grades (as shown in one phase of Powers's investigation) and the greater encouragement this must afford for those completing their junior-high-school work to extend their periods of training in the high school, these pupils do practically as well as those who have passed through the grades of the conventional organization. If they are slightly less capable when measured in this way, the recommendation would be for remedial and other work adapted to their ability rather than for exclusion. This study, therefore, does not suggest any modification of the judgment already ventured on the extent of acceptability of the claim under consideration.

IMPROVING THE DISCIPLINARY SITUATION AND SOCIALIZING OPPORTUNITIES

The statements classified under this heading. A large proportion of the statements used in the analysis reported in Table I and Fig. 1 make mention of one or more ways in which the junior high school will improve the disciplinary situation and the socializing opportunities (claim V). This function is recognized in a wide variety of expressions of which the following are illustrative: "discipline is

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simplified" by having the pupils under the control of more than one teacher during the school day; this "encourages self-direction" of pupils, as it throws upon them a greater extent of responsibility than does the one-teacher regimen; the greater number of teachers with whom the child comes in contact, including a greater proportion of men than is now found in the upper grades, has large social values; other social values are derived from the fact that children of the ages and grades included tend to make up a homogeneous social group for whom there may be "better supervision of social and recreative activities" than can be provided in the elementary school which includes eight grades and children ranging in age as widely as from five or six to seventeen or eighteen years.

Evaluating the claims. Here, again, we look in vain for other than empirical evidence for substantiation of this peculiar function. The wide range of affirmation appearing may be classed under two main heads, (1) that which asserts that the "discipline" of the school, in the older and narrower sense of the term, inclines in reorganization toward a more nearly frictionless condition than has been possible under the usual organization, and (2) that which sees in the new plan the opportunity to enrich the child's social contacts to an extent not to be hoped for in the traditional system.

1. The prevalence of friction in attempts to secure, even by "good disciplinarians," passable behavior on the part of boys and girls in the upper grades of our eight-year elementary schools in an organization in which one teacher throughout a five-hour school day gives instruction to the same group of thirty to sixty pupils, is a matter of common knowledge. The struggle is often so arduous that there is evidence that sometimes the primary consideration in selecting teachers for and assigning them to

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these grades is the ability to police the pupils rather than to instruct them.

The testimony of majority comment is that, although the problems of discipline are not entirely eliminated, their frequency of emergence is much reduced by the junior school. The improvement comes in part from the relief to the pupil in the change of rooms and of teachers accompanying departmentalization. The change of rooms is at least partial recognition of the child's impulse for movement, now too much suppressed by our sedentary school régime, and the change of teachers indulges to some extent his desire for variety. Comparisons of the programs of junior high schools and of traditional elementary schools show that the former include a more generous portion of subjects allowing for physical activity than do the latter, which often seem to be built on the assumption that the child is a sessile organism. A significant factor in improving disciplinary conditions must be the opportunities which reorganization provides for the gradual shifting of the burden of responsibility to the pupil himself. The conditions allowing for the shift of responsibility are to be inferred in part from the foregoing statements and in part from the mode of administration of programs of study which open to the pupil some choice in the subjects he is to pursue. This, joined with the indirect but far-reaching influence of a curriculum made up more largely of activities to the effective performance of which the pupil is motivated, gives promise of real disciplinary progress.

2. The opportunities for expanding and enriching the social contacts of the child are of much more significance to educational progress than is the mere reduction of the total of vexatious behavior. Departmentalization may be expected to increase the socializing opportunities through

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bringing the pupil into touch with a greater number of teachers, each of whom will bring to him something which a single personality cannot offer. Moreover, this value will be enhanced by the more extended training and the broader social contacts that are more and more characteristic of the teacher in the junior high school. As this institution also is attracting more men teachers than the elementary school is able to draw under the most favorable conditions, there is progress toward a normal social environment which is too important to be ignored. The program of studies, departing as it does in greater or less degree from the limits fixed by elementary-school curricula concerned too exclusively with developing skill in the fundamental processes, moves toward the socialization of the materials of instruction.

Lastly, we have in support of the performance of this peculiar function the fact of the approach to homogeneity of age of the pupils enrolled in the new institution. In this school, when it includes the seventh, eighth, and ninth grades, we will ordinarily have a range of age no greater than ten to eighteen years, with the extremes seldom represented. In the eight-year elementary school the range is often from five to seventeen. The development of an esprit de corps and the establishment of a relatively self-directed social organization with the narrower range of ages in the former school may be seen to be emphatically more feasible. Under the eight-year elementary-school plan it is a very common experience to find social, recreational, and athletic organizations limited solely to the pupils of the upper grades, evidencing a line of cleavage already present. The relative homogeneity of the junior-high-school group will accelerate the growth of this vital phase of school life. Incidentally, the removal of the upper grades from the elementary schools will leave

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a more nearly homogeneous group in them and will offer opportunities for better development of social, recreative, and athletic activities below the seventh grade. Nor should we leave unmentioned the advantage to ninth-grade pupils of removal from a four-year school, in which because of their immaturity almost all opportunity along these lines is wrested from them by upper classmen, to a school in whose social activities they may more nearly realize themselves. At the same time, on account of their nearness of age, the pupils of the ninth grade will not similarly overshadow those in the grades below them.

Although it is among the more intangible values to be realized by the junior high school, the improvement of the disciplinary situation and socializing opportunities is to be regarded as among the most desirable. With proper care in administering the new institution we may with certainty anticipate large results of the sort described.

OTHER CLAIMS SOMETIMES MADE FOR THE JUNIOR HIGH SCHOOL

Examination of the proportions of the statements making mention of other peculiar functions of the junior high school, as presented in Table I and Figure 1, shows clearly that no remaining function comes in for anything like the frequent recognition of those already discussed. Sometimes this is owing to the fact that the remaining claims are extraneous to the educational purposes of the school, and in other instances it is owing to some other cause, such as the unjustifiability of the function.

Those who make statements that classify under the function of *financial economy* (claim VI) in very few instances urge baldly that the total cost of education in the reorganized school is less than in the traditional plan. More often

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it is claimed that the cost per pupil is reduced through the concentration of pupils of the upper grades of elementary schools in large junior high schools or through the better retention of pupils by the junior high school. Occasionally it is stated that reduction of costs accompanies the more intensive use of equipment in departmentalization.

It has been obvious for some time that the contention that introducing the junior-high-school plan into a school system effects financial economy is ill-advised. It should be clear on a priori grounds that to provide satisfactory junior-high-school education, with all that this implies in elective curricula, better-trained teachers, expensive plant, and adequate equipment, must cost more than to provide the kind of training characteristic of the upper elementary grades, since all items of cost involved will tend to approach those of the traditional high school.

Furthermore, we have statistical evidence that the junior high school is more expensive than the grade organization. For instance, Rugg showed in the Grand Rapids School Survey¹ that "segregation of the upper grades in the so-called intermediate school means a very considerable addition to the cost of instruction. A semester's instruction in the regularly organized eighth grade costs about \$12 per pupil enrolled. A semester's instruction in the eighth grade as organized in the intermediate school costs very nearly \$20. A regularly organized seventh grade costs about \$11 per semester; an 'intermediate' or 'junior-high-school' seventh grade costs very nearly \$18 per semester." These figures were for instruction only — the largest single item of educational cost. Introducing costs per pupil for most of the remaining items would probably tend to magnify the difference found. Childs, in an intensive study of costs in certain junior high schools in Indiana, found them to be

¹ P. 473.

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higher than for other plans of organization.¹ More recently Morrison reported costs per pupil in two systems which had introduced junior-high-school reorganization. In one of these the cost per pupil in junior high school was 85 per cent, and the cost per pupil in the elementary school was 49 per cent of the cost in the senior high school. In the other, the corresponding percentages were 63 and 52.² The actual costs per pupil in elementary school, junior high school, and senior high school were, respectively, in the first system, \$52.17, \$90.23, and \$105.90, and in the second system, \$79.13, \$94.46, and \$150.99. Costs in the junior high school range between those for the elementary and senior units, being often so near the former as not to be reassuring as to the extent and quality of reorganization effected. Costs are lower for various reasons; for example, because the schedule of salaries is lower than that for the senior high school, or because classes are larger than in the senior unit. The junior high school may mean educational and social economy, and it may be possible so to administer it as to effect internal economies along some lines, but to expect it to reduce the average cost per pupil or the gross outlay for education on this level is out of the question.

How the establishment of the junior high school may *bring relief to the building situation* (claim VII) is shown by the following: "relief will be afforded our overcrowded high schools by retaining the ninth-year pupils in the intermediate schools"; "the crowded condition in several of the large grammar schools rendered prompt action necessary. At least nine additional classrooms were needed in different sections of the town and with the old high school

¹ H. G. Childs, *An Investigation of Certain Phases of the Reorganization Movement in the Grammar Grades of Indiana Public Schools*, pp. 103-121.

² Computed from data presented in Table 29 on page 134 of Henry C. Morrison's "Financing of Public Schools in the State of Illinois" (*Educational Finance Inquiry*, Vol. IX) (The Macmillan Company, 1924).

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lying idle and an abundance of space available in the new high school, to build expensive additions to existing schools did not seem sound business policy." From its nature we expect this function to arise only out of a local situation. While in instances like these the junior high school would doubtless bring the relief promised, and while it must be conceded that it is justifiable to use such an argument to hasten the establishment of the plan for its intrinsic values, it must at the same time be admitted that this function is, in itself, extrinsic to the process of education.

Two of the school documents speak of the opportunity which the junior high school gives of *continuing the influence of the home* (claim VIII): the proximity of the junior high school to the home "aided the parents in watching carefully over the moral development of the pupils . . ."; "it will make it possible for students to get a high-school education near their . . . homes at a time when they need to be under parental influence." These statements emanate from cities in which the junior high schools are nearer the homes than is the senior-high-school building to which ninth-grade pupils would be required to go were not the reorganized plan in operation. There is no doubt that these communities could be matched by others in which those advocating the junior high school would meet opposition on the ground that many children in the seventh and eighth grades must attend a junior high school more remote for them than the elementary school which they would attend in the absence of reorganization.

There can be little doubt that the coming of the junior high school in a system will *hasten reform in the grades above and below* (claim IX) those included in this institution. A thoroughgoing acceptance in practice of the principles around which the junior high school is organized will bring a demand for the application to other parts of the system

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of those which are appropriate. Curricular and other adjustments in two or three years of a school system must be reflected in the years above and below. But however pervasive the resulting reform may be, it must be regarded more as a by-product than as one of the major peculiar functions of this school.

A few of those whose statements have been used for the figures in Table I say that the junior high school tends to *normalize the size of classes* (claim X). It does this through the concentration of pupils otherwise distributed to several elementary schools. It is inevitable that under the traditional plan some of the schools will have upper-grade classes too small or too large to be cared for in the most efficient manner. The junior high school, through handling larger numbers, can divide them into groups more nearly of standard size, thereby avoiding the expensive small class on the one hand and the inefficiency of congestion on the other. This function must, however, be regarded as more local than universal.

Lastly, a few educational leaders see in the junior-high-school plan an opportunity of *bringing relief to teachers* (claim XI). This relief, they say, is one of the benefits of departmentalization, which requires less total preparation for the work presented each day. The conscientious teacher will be more nearly able during his working day, under the conditions of partial or complete departmentalization, to make such preparation for his classes as will aid him in coming before them with the assurance of his adequacy to the task at hand. This, coupled with the additional relief from disciplinary pressure required to control the same class group for five or six hours each school day throughout a semester or a year, will lessen appreciably the drain on the teacher's reservoir of nervous energy. The testimony of teachers who have worked under both systems is strongly

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in support of this expectation. Despite the desirability of this result of reorganization, since it is not one of the functions of the junior high school which concerns directly the education of the child — and it is for this purpose and not for the teachers that we have schools — it will not be included in the working list of peculiar functions to be used in testing the junior high school.

THE LEGITIMATE EDUCATIONAL FUNCTIONS OF THE JUNIOR HIGH SCHOOL

A restatement of the functions in summary. In this and the foregoing chapters we have taken occasion to scrutinize, as best we may in brief and with the limitations of the present state of our knowledge of the institution, each of the peculiar functions of the junior high school posited by those who have expressed themselves concerning its purposes or have attempted to realize them in practice. This examination seems to the writer to lead to the conclusion — to be held only until better light is available for reëvaluation — that the peculiar functions which may be regarded as legitimate are those named in Table I and Fig. 1 which are seen to have been more frequently proposed than others, specifically those numbered I to V.

Although there is an absence of unquestionable evidence that the junior high schools are at present holding pupils better than does the conventional school organization, there is basis for confidence that (1) thoroughgoing reorganization will remove many of the causes of elimination that lie within and even to some extent those that lie without the school. Through shortening the period now devoted to the tool subjects by elimination of nonessentials and their more effective presentation by methods scientifically selected, through utilizing the saving thus made for

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subjects and content providing for enrichment, and through moving each pupil at a rate appropriate to him, (2) the junior high school may be expected to effect a genuine and appreciable economy of time. It is also much better adapted than is the traditional organization to (3) recognition of and (4) exploration for variation in abilities and interests of pupils and to educational and vocational guidance. The accomplishment of the purpose of exploration and guidance through giving the pupil a wide array of vocational experiences will constitute at least (5) a beginning of vocational education for those whose school careers must be interrupted before or near the close of the junior-high-school period. To be just to certain groups of pupils, especially those who are over age, it may be necessary and advisable in some localities to supplement this meager beginning by special vocational training to be provided within this period. By achieving these five peculiar purposes long strides will be taken toward the performance of that larger function, democratizing the American public-school system. The junior high school can also (6) better recognize than can the traditional plan the important changes taking place in the child's nature at adolescence. It will (7) provide the conditions allowing for improvement of teaching. As a consequence of this better teaching and other influences for motivation an improved application of the pupil will result, which (8) will bring for the individual, if not for the school, a higher standard of scholarship. This superior application, joined with other agencies, (9) will bring a better disciplinary situation and, with still other reforms which accompany the junior high school, will enlarge the socializing opportunities of the school.

Before leaving this restatement in summary, the fact seems worth stressing that *this formulation of peculiar functions is not to be thought of as the fruit of a single brain.* One

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is justified in scouting the supposition that the opinion of one person could ever carry weight enough to determine the purposes of any so important a *social* institution as a new educational unit manifesting itself at many points over wide areas. As was affirmed by the title and content of Chapter I, junior-high-school reorganization is a *movement*. Although the rate of development or the direction of a movement as socially significant as junior-high-school reorganization might be affected by this or that individual, the impulse that will make it a common feature of our schools must reach farther back and be more pervasive in the social mind. *The chief element of any claim which such formulation may have to acceptability is that it is in effect a cross section of the educational consciousness that is helping the junior high school to take shape in the American school system.* Modified and redefined it must be, in the light of experimentation and of such information as is available, such as, for example, has been cited in the foregoing canvass. But — changing the figure — its roots must always lie, as do those of the present statement of purposes, in the minds of many rather than of one.

Interrelationships of the functions. Consideration of the working list of peculiar functions of the junior high school should not be concluded without the admission that they are not discrete purposes but are, instead, much interinvolved. Realizing one of them will often mean partially realizing several others. A few of these relationships have already been pointed out in foregoing pages. Other instances of such interrelation are the tendency to retain pupils following the recognition of individual differences, the economy of time resulting from the improvement of teaching, or the bettered disciplinary situation accompanying the recognition of the nature of the child and the recognition of individual differences.

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Analysis of the peculiarity of the functions. These functions are to be regarded as *peculiar* to the junior high school in one or both of two senses, (1) *as contrasted with those of the traditional organization of the grades it includes* and (2) *as contrasted with the purposes to be achieved in the reorganized school in the grades above and below.* In the former sense each of the functions is peculiar to the junior high school, since the older organization is not designed to encourage their performance. In the second sense few of the functions are exclusively distinctive of this new institution. For instance, it is obvious that time must be economized, individual differences recognized, better teaching provided, and disciplinary situations and socializing opportunities improved not only in the seventh, eighth, and ninth grades but in grades above and below those under consideration as well.

On the other hand, many, if not most, of the functions in this working list possess *some measure* of peculiarity as contrasted with the grades above and below. For example, retaining pupils is peculiarly appropriate, since it is between the sixth and tenth grades that the bulk of elimination from school takes place; although differences should be recognized and capacities and interests explored in other grades, we must do it here, if nowhere else in the system; from what has been said in the foregoing pages, this time is also especially appropriate for the provision of the beginnings of vocational education; there is but one time in his life when the individual is adolescent and when the means of education must be peculiarly adapted to the changes then taking place within him; and for the reason just given, if for no others, the grades concerned are without question to some extent those in which disciplinary and social problems tend to be more perplexing than elsewhere in the school system.

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THE RELATIVE IMPORTANCE OF THE FUNCTIONS

These peculiar functions are not to be thought of as of equal importance. Something of the differences in importance as seen by educational workers is shown in the results of two ballotings secured from one hundred and thirty teachers, principals, and superintendents who had had some opportunity to give systematic consideration to these purposes in their relation to the new institution. Many of those who voted had responsibilities of one sort or another in junior high schools.¹ The method of balloting was the simple one of ranking the functions in the order of the desirability of their performance in junior-high-school grades, assigning the rank "1" to the function considered most important, "2" to the next most important, and so on. The first balloting was on the five major functions in the list: realizing a democratic school system (assuming that the five subfunctions are constituents in it), recognizing the nature of the child at adolescence, providing the conditions for better teaching, securing better scholarship, and improving the disciplinary situation and socializing opportunities. The average ranks² computed from these ballots in the order in which the functions are listed were 1.4, 2.1, 3.4, 4.4, and 3.7. *The democratizing function and the recognition of adolescent nature are here seen to be held as much more important than the three remaining functions.*

The second method of balloting required numbering the subfunctions of democratization, that is, A, B, C, D, and

¹ Leonard V. Koos, "The Peculiar Functions of the Junior High School — their Relative Importance," *School Review* (November, 1920), Vol. XXVIII, pp. 673-681.

² The method of computation was merely that of adding all the ranks assigned to each function and dividing by the number of judges. By this method, the smaller the average rank is, the higher the esteem in which the function is held.

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E of Table I and Fig. 1, and functions II, III, IV, *f* and V — nine functions in all — in the order of their importance in the junior high school. The comprehensive function *f*, I, was omitted from this vote. The average ranks resulting are not reproduced here, but the order of importance arising from them is shown in Table XIV, together with the

TABLE XIV. COMPARISON OF THE ORDER OF IMPORTANCE OF PECULIAR FUNCTIONS OF THE JUNIOR HIGH SCHOOL AS DETERMINED BY THE AVERAGE RANKING OF 124 JUDGES AND BY FREQUENCY OF MENTION IN EDUCATIONAL LITERATURE ¹

PECULIAR FUNCTIONS	FROM AVERAGE RANK	FROM FREQUENCY OF MENTION
A. Retention of pupils	3	1
B. Economy of time	4	2
C. Recognition of individual differences	1	3
D. Exploration and guidance . . .	5	6
E. Beginnings of vocational education	8	7
II. Recognizing the nature of the child at adolescence	2	8
III. Providing the conditions for better teaching	6	4
IV. Securing better scholarship	9	9
V. Improving the disciplinary situation and socializing opportunities . .	7	5

order of importance as determined by the total frequency of mention in both kinds of literature (combined) analyzed for Table I. In this second balloting *the five functions coming first are recognition of individual differences, recognition of the nature of the child at adolescence, retention of pupils, economy of time, and exploration and guidance.* The chief

¹ Adapted from Leonard V. Koos's "The Peculiar Functions of the Junior High School — their Relative Importance," *School Review* (November, 1920), Vol. XXVIII, p. 680, Table III.

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difference of order as given by the balloting and the frequency of mention in the literature as shown in Table XIV is on the recognition of the nature of the child at adolescence, the judges giving it a much higher place than does frequency of mention in the literature. In considering the results of these ballotings one must ward off the conclusion that the low rankings signify *unimportance*. Instead, they signify merely *less* importance in the minds of the judges voting.

THE JUNIOR HIGH SCHOOL AS A TRANSITIONAL UNIT IN THE SCHOOL SYSTEM

In recent years there has been a good deal of emphasis — perhaps more than formerly — on the junior high school as a “transitional” school. Thus, Glass has said:¹

The *nature* of junior high school administration is *gradual transition* from elementary to secondary education. This administrative principle is in full correspondence with the gradual transition of early adolescent children from childhood and of preadolescent children to the mid-adolescence of the senior high school.

On account of this recent emphasis it may seem to some to be in the nature of an innovation. However, it has been implicit and even expressed in the claims made over a long period for the reorganization being effected. This was shown in the treatment of the function of retention in the foregoing chapter, where quotation was made of such claims as that the junior high school will “bridge the gap” or “render smoother the transition” from elementary to secondary-school subjects. It has been one of the chief grievances against the old organization that there is poor articulation

¹James M. Glass, “The Junior High School,” *New Republic* (November 7, 1923), Vol. XXXVI, Part II, Educational Section, pp. 20-21.

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between elementary and secondary education. The need of transition is manifest in the conception of economy of time, which admits of the earlier introduction of functional aspects of secondary-school subjects. It recurs again in vital form in the function of exploration and guidance and, as may be seen without amplification, in the purpose of recognizing the changing nature during adolescence. Even though recognized within several of the functions, however, the idea of transition is deserving of the special emphasis it is now being given, for the reason that it is a serviceable unifying concept by which certain essential elements of a number of functions are knit together.

Similarly, the rôle of the junior high school in *guidance* has more recently come in for increased emphasis both in educational literature and in the schools themselves. It is probably superfluous to point out that the point of view of this book, as expressed in Chapter II in discussing exploration and guidance and elsewhere, is favorable to the serious acceptance in the new educational unit of this distributive function of the school. It may be that the more recent increase of emphasis arises from the fact that, as has already been stated, little progress can be made in achieving another important purpose — the recognition of individual differences — without accepting exploration and guidance as a corollary. In fact, the recognition of individual differences must wait upon exploration and guidance.

THE RELATIONSHIP OF PECULIAR FUNCTIONS TO THE AIMS OF SECONDARY EDUCATION

At the opening of the preceding chapter it was stated that the test of an educational institution is the extent to which it realizes the aims of education, and that the junior high school, to justify itself, must make its contributions to

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the achievement of this common function of all schools. The intervening pages have been devoted to an endeavor to establish the valid peculiar functions of this new institution, *the relationship of the achievement of which to the realization of the ultimate aims of education is that of facilitation. The performance of these peculiar functions makes the realization of the ultimate aims more readily possible.* This relationship is so patent that only the briefest illustration is necessary for confirmation: without better retention we may not hope to accomplish as well our ultimate purposes, a proper economy of time must hasten their realization, a recognition of individual differences will guarantee their better approximation, etc. Thus the junior high school must meet not only the test applied to every educational institution but also the test of achieving its peculiar functions as a distinctive institution, the latter being performed to facilitate the attainment of the aims of education.

RELATIONSHIPS OF THE JUNIOR HIGH SCHOOL TO SCHOOLS ABOVE AND BELOW

Relationships to the senior high school. No unit in the system should be considered solely in terms of itself, and now that its distinctive purposes have been examined into, the junior high school will be briefly discussed in its relationship to schools immediately above and below, that is, to the senior high school and the elementary school. For both these neighboring units this will be accomplished primarily by reference to aims and functions, although in discussing relationships to the elementary school the effect of shortening the eight-year to a six-year period will also be touched upon. Because the present writer has considered the problems of these relationships elsewhere, they will be dealt with by drawing freely on these earlier discussions.

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In connection with the earlier treatment of relationships to the senior high school ¹ a formulation of aims and functions of secondary education was first arrived at by analysis of the statements on the subject by twenty-five leaders and groups of leaders in the field. The *aims*, four in number, coincide with those with which the reader has already been made familiar, and are (1) civic-social-moral responsibility, (2) health, (3) recreational and æsthetic participation and appreciation, and (4) occupational efficiency, inclusive of any special preparation for higher institutions. The *functions* are five in number, (1) achievement of a democratic secondary education, (2) recognition of individual differences, (3) exploration and guidance, (4) recognition of adolescent nature, and (5) training in the fundamental processes, that is, in the subjects which constitute the tools of learning, such as oral and written expression, reading, and computational skills. There is a striking degree of coincidence between this formulation of functions and those just accepted for the junior high school, despite the fact that the bodies of literature analyzed in arriving at the concepts were entirely distinct. The only function in the present list not included in the peculiar functions is training in the fundamental processes, its omission being explained by the fact that those setting up claims for the new unit would be unlikely to stress a purpose already performed in the older organization.

The following paragraphs will indicate the extent of identity and differentiation of aim and function of the two secondary-school units, the junior high school and the senior high school: ²

¹ Leonard V. Koos, "The Junior High School and College Entrance," *School Review* (September, 1924), Vol. XXXII, pp. 494-507.

² *Ibid.*, pp. 502-504.

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It seems wise to accept the civic-social-moral aim as applying to the full period of secondary education, that is, without distinction in the extent of obligation in the two units. Doubtless the means of achieving the aim must be different for the two levels of education concerned, but the obligation with respect to the aim is common to the junior high school and the senior high school. The same thing may be said of the recreational and health aims. Concerning the aim of occupational efficiency, however, practically all the writers on the subject agree that this is an obligation peculiar to the senior high school and one which the junior high school should seldom, if ever, be asked to discharge. The period of specialization should be postponed for most students, at least until the end of the ninth grade, the only exceptions being in the case of those who are over age or who seem destined to discontinue their education with the close of the junior-high-school period. Even for these, training should be much more general than special.

The obligation for the performance of at least three of the five functions lies with almost equal weight on the two units of the new secondary school. These functions are the achievement of a democratic secondary education, the recognition of individual differences, and the recognition of the nature of the child at adolescence. There is, doubtless, a small proportion of the population who, although they can profit from junior-high-school education, ought not to continue into the senior high school, even with all possible adaptation of courses to meet the needs of the less capable. The proportion, however, is hardly large enough to free the upper unit to a marked extent from the performance of the function first named. Because individual differences persist — even enlarge — in the later high-school years, their recognition is equally essential in the junior and senior divisions. Adolescence also is a characteristic of the students in both divisions and must, therefore, be recognized in both, although early adolescence may require somewhat different treatment than do the later portions of the period.

In the case of the two remaining functions, exploration and guidance, and training in the fundamental processes, there must be a marked degree of differentiation of obligation in the two units. Although they are functions of the full period

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of secondary education, the burden of their performance rests more heavily on the junior high school than on the senior high school. This is true in the case of training in the fundamental processes, for the reason that equipping the pupil with the tools of an education must be one of the first concerns of the lower school, the proportional emphasis decreasing as he moves upward in the school system. The senior-high-school grades will continue to be responsible for some of the training in the vernacular, while the junior high school will have even larger responsibilities along this line, besides additional duties in the way of imparting computational skills, etc. The more important differentiation seems to be in the case of exploration and guidance. . . .

It may be too obvious to require mention that the two chief differences in aims and functions of the two secondary-school units as here posited are *complementary* to each other. The outstanding difference in their aims is that the senior high school should to some extent be given over to occupational specialization, inclusive of college preparation. The distinction with respect to functions is that the junior high school must stress exploration and guidance, which in the nature of things must *precede* occupational and other specialization. One of the principal defects of the conventional four-year high school is that during this brief period we have been trying to achieve both of these purposes simultaneously for a given student without being fully aware of the fact. The inevitable result is the curricular confusion which brings the student to the end of his high-school career with "a little of everything but not much of anything" to his credit in the records of the institution from which he is being graduated.

This article closes with emphasis on the inference that the junior high school should be freed by the colleges from responsibilities for anything in the way of special preparation for entrance to them. This desirability was referred to in Chapter II while discussing the place of the junior unit in vocational education. It should be possible to meet entrance requirements within the senior-high-school period.

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Relationships to the elementary school. 1. *Analysis through comparison of aims and functions.* The formulation of aims and functions of elementary education to be used in the scrutiny of the relationships to it of the junior high school is one arrived at by the writer in an analysis of literature by a procedure similar to that followed in arriving at the formulation for the secondary school.¹ The dominant aims located by this method were four in number, namely, (1) civic-social responsibility, (2) health, (3) recreational and related participation, and (4) practical efficiency in an *unspecialized* sense. There were three functions frequently found, namely, (1) recognizing individual differences, (2) affording training in the fundamental processes, and (3) adapting education to the child's nature and interests.

The major similarities and differences arising from a comparison of this formulation with the emphasis demanded in the junior high school in accordance with the foregoing interpretation may be briefly stated. Elementary school and junior high school will hold their aims in common, with the exception that training for unspecialized practical efficiency will *always* be called for in the lower unit, whereas it may be desirable — as has more than once been stated in this book — for some junior units having large numbers of over-age children to provide to some extent for specialization. For most schools, however, the four aims will not be essentially different.

Although similarities and differences as to functions have already been touched upon above while considering the senses in which functions accepted for the junior high school are peculiar to it, the problem will be here re-addressed. Two of the three functions named in the preceding paragraph the elementary school also has to some

¹ Leonard V. Koos, "Recent Conceptions of the Aims of Elementary Education," *Elementary School Journal* (March, 1924), Vol. XXIV, pp. 507-515.

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extent in common with the junior high school, namely, the recognition of individual differences and training in the fundamental processes. With regular progress of pupils through the grades, the problem of recognizing differences must be greater in the junior high school than in the grades below. On the other hand, the burden of training in the fundamental processes must be heavier on the elementary unit. The difference as to recognition of the nature and interests of pupils is, as was demonstrated in the first section of the present chapter, a real one, because it is the difference between adapting education to children who are primarily preadolescents and those who are in the first years of the adolescent period. There should be differences also between elementary education and junior-high-school education arising out of the fact that the latter has functions not so often posited for the elementary school, especially exploration and guidance, and democratization. *In the functions at least there are marked differences between elementary and junior-high-school education.*

It is appropriate to say a word at this point concerning the respective rôles of the elementary school and the junior high school in fostering what is often designated as common or *integrating* education. That this obligation lies heavily on both is clear from their common aim of training for civic-social-moral responsibility and their common function of training in the fundamental processes. The obligation is represented also in the achievement of other purposes. It has been seen to lie also on the senior-high-school unit. No program for our three lower schools can be regarded as satisfactory which does not make generous provisions along these lines.

2. *Analysis through effects of junior-high-school reorganization.* In the whole question of the mutual relationships of junior high school and elementary school there is, be-

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sides the relationship of the proper service of the two units as shown in a comparison of their aims and functions, the problem of the effects of junior-high-school reorganization on our nethermost school unit. Because this involves the removal of its two highest grades, — what is looked upon by some as a sort of decapitation, — the misgiving occasionally finds expression that this is not accomplished without irreparable damage to the elementary school. It may be contended, on the contrary, that this decapitation is beneficial to the elementary school.¹ (1) In the first place it will assist in discovering the middle grades — the fourth, fifth, and sixth — of our schools, which, owing to the focus of attention on the seventh and eighth grades of the old elementary school, have never had anything like adequate consideration. (2) The discovery just referred to will bring about a better location of responsibility for giving definite kinds and amounts of training. Heretofore, with attention so largely on the upper grades, standards and objectives have not been so definite as they might well be. (3) Last among the advantages to be named — although there are others — is the fact that removing these two upper grades will leave in the new elementary school a much more nearly homogeneous social group or unit than is characteristic of the eight-year school. The pupils are, with few exceptions, preadolescents. The leadership in the new school is not likely to be that of the adolescent. This situation is conducive to training in responsibility and to the development of a school spirit in the new upper grades to an extent impossible in a situation where children who are adolescents monopolize the functions of leadership, and where the interests of a majority of those in the two upper grades are veering from those of the preadolescent.

¹ See Leonard V. Koos's "The Junior High School and the Elementary School," *Educational Review* (November, 1921), Vol. LXII, pp. 309-316.

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QUESTIONS AND PROBLEMS

1. Why do physical-growth curves based on consecutive measurements of the same individuals over a period of years show greater acceleration during adolescence than averages of single measurements of large numbers of children at the different ages?
2. Generalize the facts of physical growth during adolescence.
3. How do age-grade distributions of pupils help to an appreciation of gradual rather than sudden changes in school organization to adapt it to the pronounced changes in pupils during adolescence?
4. How is the problem of coeducation influenced by the differences in physical and mental development of boys and girls?
5. Find what leaders in the field say concerning the needs, methods, and content of sex hygiene.
6. Which is more important in encouraging better teaching, departmentalization or more extended training of teachers?
7. How may the junior high school stimulate brighter pupils to performance up to capacity?
8. To what extent do you think such functions as retention of pupils, securing better scholastic performance, and improving the disciplinary situation and socializing opportunities are results of achieving other functions in the list?
9. Secure and average the judgments of the relative importance of the functions in a manner similar to that reported in the chapter.
10. Show how the concept of the junior high school as a transitional school is, as concerns the peculiar functions, a composite.
11. Cite instances of the lack of articulation between junior and senior high schools.
12. Compare the list of peculiar functions in this book with the "special purposes" on page 20 of the Fifth Yearbook of the Department of Superintendence. (See page 65.)

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IV

THE TEST OF THE ORGANIZATION

THE FEATURES OF THE JUNIOR HIGH SCHOOL

If the test of the junior high school as a distinctive institution is the extent of its performance of its peculiar functions considered and established in Chapters II and III, *the test of its organization must be the adaptation of the features of this organization to such performance.* All the essential features must be provided, and they must be administered in a way designed to achieve the desired results.

A canvass of the make-up of the junior high schools of the country shows a wide variety in combination of features of organization. A fairly complete catalogue of what seem to be the most significant of the features of reorganization found are the following: (1) *the grades included*, (2) *the admission requirements*, (3) *the program of studies*, (4) *grouping by ability*, (5) *the distribution of work to teachers*, usually by a greater or less extent of *departmentalization*, (6) *the plan of promotion*, more commonly by subject, (7) *the methods of instruction*, (8) *the advisory system*, inclusive of the disciplinary organization, (9) *the social organization*, (10) *the improvement in the instructional and supervisory staff*, (11) *the housing*, and (12) *the equipment*.

In an attempt to clarify thought on the junior high school, particularly as to the relationship of its features to the performance of its functions, Fig. 18 has been de-

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vised. It includes in its left-hand column the working list of peculiar functions established in the preceding chapter and, in the upper horizontal row, the list of features just named. *By the aid of this diagram attention may be more directly focused upon the question of the bearing of the presence in the junior high school of each feature upon the likelihood of performance of each function or upon the sort of variation of each feature best calculated to perform each function. It is worth emphasizing that the heart of the junior-high-school problem is the adaptation of the features to the performance of the functions.*

In the figure the squares formed by the intersections of the columns and rows are crosshatched, single hatched, or in outline, depending upon what seems to be the degree of importance of a feature under consideration, or of a particular variation of it, to the realization of a function. Cross-hatching has been used to indicate what seems to be a relationship emphatically important; shaded, important; and in outline, of little or no importance. For example, the feature of departmentalization is judged to be of great importance in exploration for guidance, vocational education, providing conditions for better teaching, and improving the disciplinary situation and socializing opportunities of the school, and it is important for retention of pupils, economy of time, recognition of individual differences and the nature of the child at adolescence, and securing better scholarship. These are, of course, only opinions, based upon such considerations as it has been possible to muster with the knowledge of the junior high school now available. They do not depend upon a full array of scientifically assembled materials. These it will take years and even decades to accumulate. But it illustrates the method of thought which must be pursued to defend the exclusion of a feature or a particular variation of a feature from the

Peculiar Functions of the Junior High School		Features											
		1. Grades Included	2. Admission Requirements	3. Program of Studies	4. Ability Grouping	5. Departmentalization	6. Plan of Promotion	7. Methods	8. Advisory System	9. Social Organization	10. Staff	11. Housing	12. Equipment
I. Realizing a Democratic School System through:	A. Retention of Pupils												
	B. Economy of Time												
	C. Recognition of Individual Differences												
	D. Exploration and Guidance												
	E. Beginnings of Vocational Education												
II. Recognizing the Nature of the Child at Adolescence													
III. Providing Conditions for Better Teaching													
IV. Securing Better Scholarship													
V. Improving the Disciplinary Situation and Socializing Opportunities													

FIG. 18. The relationship between the features of the junior high school and the performance of its functions. (Crosshatching indicates that a feature is highly important in the performance of a function; single hatching, important; in outline, of little or no importance)

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junior-high-school plan or the inclusion of one in it, or to choose between two or more variations of the same feature.

It requires but cursory thought upon the relationships between features and functions to force the conviction that the provision of only a few of the former, as is the common practice, cannot be expected to perform adequately all the purposes of the junior high school. This must be true no matter how important each of them in itself may be. Application of this test of the organization, as those in touch with actual practices in self-styled junior high schools must concede, will find too few of these new institutions equipped for even as much as measurably accomplishing their large special purposes.

The remaining paragraphs of the present chapter will be devoted to illustrating the relationship of the features to the achievement of the functions by a brief discussion of the first two features named in Fig. 18, (1) the grades to be included in the junior high school, and (2) the requirements for admission to it. The subjection of other features to the test of the likelihood of their performance of the peculiar functions is left for succeeding chapters.

THE GRADES INCLUDED IN THE JUNIOR HIGH SCHOOL

There are many variations as to the grades included in the junior high school. The more common practices in the usual twelve-grade systems are for it to include (1) the seventh and eighth, or (2) the seventh, eighth, and ninth grades. Douglass's figures, gathered about 1915, show almost equal numbers following both practices but with some preponderance for the former.¹ Childs's figures for Indiana showed a preponderance of the three-year unit,

¹ A. A. Douglass, "The Junior High School," Fifteenth Yearbook of the National Society for the Study of Education (1916), Part III, p. 88.

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including seventh, eighth, and ninth grades.¹ Later inquiries on this score have found sometimes one, sometimes the other, of these two plans predominating, the balance depending on the nature or degree of selection of the systems to which appeal was made for information. Pratt, in a table listing 26 cities of 100,000 population or over having junior high schools in operation, shows that in 21 they include all three grades.² Smith, from responses to a questionnaire directed to "cities which, according to recent reports, were supposed to have made considerable progress in the organization of junior high schools," found 18 of 64 cities to include seventh and eighth grades, and the remaining 46 cities to include seventh, eighth, and ninth grades.³ Clement, on the other hand, reporting on 40 school systems in Kansas, few of them as large as those represented in Pratt's investigation, showed that 24 were operating two-grade units, 12 systems were operating three-grade units, and the remaining 4 systems were organized on still other plans.⁴ Again, Edmonson, in an inquiry made in 1923 into "departures from the 8-4 plan of organization" in states of the North Central Association of Colleges and Secondary Schools, found the schools operating on the 6-2-4 plan outnumbering those on the 6-3-3 plan. Of 877 systems (in a total of 1160 to which blanks were sent) from which responses were received, 501, or 57 per cent, had departed from the 8-4 plan. Of these 501, 299, or

¹ H. G. Childs, *An Investigation of Certain Phases of the Reorganization Movement in the Grammar Grades of Indiana Public Schools*, p. 69.

² Orville C. Pratt, "Status of the Junior High School in Larger Cities," *School Review* (November, 1922), Vol. XXX, p. 666.

³ William A. Smith, "Junior-High-School Practices in Sixty-four Cities," *Educational Administration and Supervision* (March, 1920), Vol. VI, pp. 139-149.

⁴ John A. Clement, "Current Practice in the Organization and Administration of Junior High Schools," *School Review* (February, 1922), Vol. XXX, p. 111.

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45.7 per cent, were organized on the 6-2-4 plan, and 138 systems, or 27.5 per cent, were organized on the 6-3-3 plan.¹ Inferences from the results of such inquiries may properly be that smaller cities and reorganizations more recently effected show larger proportions of two-year units, and larger cities and more thoroughly established reorganizations show larger proportions of three-year units.

While these two are the most frequent types of junior high schools when considered from the standpoint of the grades included, reorganization is known to take a number of other forms. There are occasional schools with but a single grade, usually the eighth grade. There are those with other combinations of grades, such as the sixth, seventh, and eighth, or the eighth and ninth. An appreciable proportion of schools in smaller systems is operating six-year secondary schools including all grades from the seventh through the twelfth, with little or no attempt at a line of cleavage between the eighth and ninth or between the ninth and tenth grades. Mention should also be made of junior units established in some Southern states where the typical organization is 7-4, including only eleven grades. Here the junior high schools include different groupings of grades.

Another grouping of grades in junior high schools more recently advocated, notably for states in which the secondary schools are being extended to include the two junior-college years, is the inclusion in this lower unit of four grades, namely, the seventh, eighth, ninth, and tenth. This leaves for the upper or senior unit an equal number of grades, the eleventh, twelfth, thirteenth (first college year), and fourteenth (second college year).

¹ J. B. Edmonson, "Departures from the Eight-Four Plan of Organization," Proceedings of the Twenty-eighth Annual Meeting of the North Central Association of Colleges and Secondary Schools (1923), Part I, p. 68.

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The beginning grade. Questions of the sort here involved, that is, of what and how many grades should be included, may not be properly decided by mere weight of practice. They must be settled on the ground of the better performance of the peculiar functions by one of the several variations in use or possible. If the new organization is to be designed to hold pupils better, it must begin at a point near the time when pupils are starting to drop out in large numbers. This we have seen to be between the sixth and seventh grades. If we are to economize time in a democratic manner, we must do so for those who will not remain in school beyond the eighth or ninth grade, and it is therefore urgent to begin the new school at a point no later than the seventh grade. Neither can we postpone to a grade beyond the seventh the provision of enlarged opportunities for recognition of individual differences, exploration and guidance, and the beginnings of vocational education particularly imperative for children of the age when they are beginning to sever their connections with the school. From the facts cited in the preceding chapter on the percentages of boys and girls in the seventh grade who are pubescent or post-pubescent, it is apparent that the changes in school organization adapted to the changes coming at adolescence should not be delayed to a point beyond this grade. Were it not for conflicting needs, such as the continuation of intensive training in the fundamental processes or the objection to sending children so young to schools as remote from their homes as many of the junior high schools will be, it might be appropriate to include the sixth grade. This would be especially true for girls, because of their earlier arrival at sex maturity. Lastly, because of the pupils' rapid approach to the time when they will take their places in adult society, the enlarged socializing opportunities may well find a place earlier than is now common.

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The number of grades. But the issue arising from variation in practice does not emanate so much from the point of beginning, on which there is an approach to unanimity of opinion, as it does from the number of grades to be included. It is often stated that the system with the three-year junior high school may be expected to hold many children in school one year longer than will the system with the junior high school including only the seventh and eighth grades. Some advantage is to be anticipated from such a bridging of the gap in external organization. The three-year organization has been sometimes urged also because the longer period is better adapted to shortening the period of secondary education for the brighter pupils.

There are those who see in the two-year unit a better opportunity for adapting education to the vocational needs of pupils. They insist that the gradation of occupations as to the amount of training required for entrance is not by steps as far apart as three years, and that the three-year unit will therefore be administratively more unwieldy. It is occasionally suggested that we should carry the two-year-unit plan into the four-year high school by breaking the latter into two similar units, at least for internal administration. As being in harmony with this plan, may be mentioned the two-year commercial and other vocational curricula now often finding place in the four-year high school, and seemingly adapted to the needs of pupils who cannot or should not proceed to the last high-school years. This two-year junior unit would thus provide, with the tendency to two-year units observable in higher institutions, a series of two-year steps from the sixth grade to the professional school.

The two-year junior high school thus has a strong administrative argument in its favor. It is manifest, however, that it is applicable only to our largest systems and not to

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cities of moderate size and smaller; that it would add to rather than subtract from the problems of articulation between schools, and that it is not so well suited as is the three-year unit to the present tendency of laws on compulsory education to require attendance in regular day schools up to the age of sixteen years.

There is nothing in the nature of the child which recommends either the eighth or the ninth grade as the end of the junior-high-school period. But it may be significant enough to mention that the opportunities for socialization of the ninth-grade pupils will be better in the junior than in the four-year high school, because pupils of this grade are usually so much outdone by the upper classmen that their opportunities for growth along these lines are few. On the other hand, as has already been pointed out, they are not so much more mature than children of the seventh grade that they will in turn overshadow the latter. The 3-3 plan should better conduce to homogeneity of the groups than the 2-4 plan.

To those who find in the two-year junior high school the advantage that it will tend to disrupt the present organization less than will the three-year unit, the advocates of the latter respond that one of the valuable by-products of the three-year plan is, that it *does* break in upon traditions and inspires reform. It causes more fundamental reorganization. This is shown in comparisons that have been made of the offerings and of the content of subjects of study in two-year and three-year units. Although progress along these lines has not been so rapid as is desirable in three-year junior schools, it has been typically more so than in the two-year schools.

The opportunism in the argument that the three-year high school relieves a local building situation has been alluded to in the preceding chapter.

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The advocacy of the four-year junior high school as the lower division of what seems to be an impending eight-year period of secondary education including junior-college years, was mentioned above. This advocacy is conditioned chiefly by the desirability of a more logical organization of secondary education than is promised by a succession of three separate units, the first a junior high school of three years, the second a senior high school of three years, and the last a junior college of two years. Certain educators believe that they see a more sensible distribution of these eight years in two four-year units, making for a 6-4-4 organization of the public-school system.¹ It may be said that this type of realignment of grades would be beneficial to the service renderable by the junior-high-school unit as may be judged by a brief consideration of some of the peculiar functions, for example, retention of pupils, economy of time, providing the beginnings of vocational education, etc. On the other hand, the inclusion of the tenth grade in the junior-high-school period would affect unfavorably the achievement of only one of the functions, that is, improving the disciplinary situation and socializing opportunities. It would do this by widening the age range of pupils in the junior unit, subtracting somewhat from their social homogeneity. The other advantages to the junior high school itself, but more especially to the improved organization of secondary education as a whole, would far outweigh any such derogatory influence.

All the facts for the solution of the problem of the number of grades to be included in the junior high school are not yet at hand. But surveyed from the point of view of the functions to be performed, the balance of judgment seems to be in favor of at least a three-year unit beginning

¹ For a more extended treatment of this proposal, see Leonard V. Koos's "The Junior-College Movement" (Ginn and Company, 1925), pp. 358-366.

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with the seventh grade, rather than the two-year school. The plans which begin with the eighth grade or include but a single year have little more than the argument of temporization in their support.

ADMISSION REQUIREMENTS

An illustrative recommendation. The trend of thought in respect to admission to the junior high school is well illustrated by the following excerpt from a report adopted by the North Central Association of Colleges and Secondary Schools: ¹

The commission recommends that the admission of pupils into the junior high school shall be determined on the basis of maturity, and the ability of the pupil to profit by the junior-high-school work offered, rather than by completion of the sixth grade solely. Therefore,

1. All pupils who have completed the first six grades of the elementary school should be promoted to the junior high school.

2. All mentally normal but retarded pupils should be transferred to the junior high school at least one full year before the legal age for leaving school. For many of these, special educational provision must be made.

3. Other children should be admitted who have shown ability, even though they have not completed the sixth grade.

A report on practices. Investigation of practices shows that they lag considerably behind this expression of what the requirements for admission should be. Table XV and the following quotation from Smith contain evidence in point: ²

¹ Proceedings of the Twenty-third Annual Meeting of the North Central Association of Colleges and Secondary Schools (1918), pp. 23-24.

² William A. Smith, "Junior-High-School Practices in Sixty-four Cities," *Educational Administration and Supervision* (March, 1920), Vol. VI, p. 143.

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Theoretically it has been conceded quite generally that the junior high school should receive retarded pupils who have entered the early adolescent age, quite as much as those who have completed the sixth grade on time. Table [XV] shows the actual practices of the 64 cities in this respect. It will be observed that practice lags as yet materially behind theory. Only 9 of the 64 cities — about 15 per cent — make

TABLE XV. ADMISSION REQUIREMENTS TO JUNIOR HIGH SCHOOL ¹

GROUP OF SCHOOLS	BASES OF ADMISSION		
	On Completion of Sixth Grade only	On Completion of Sixth Grade mainly, with Age to Some Extent	On Age chiefly
Three-year systems (46 cities) .	14	25	7
Two-year systems (18 cities) . .	9	7	2
<i>Total</i> (64 cities)	23	32	9

age the chief criterion for admission. However, 32 of the remaining cities — or 50 per cent of the total — consider age to some extent. All told, then, nearly two thirds of the cities make some allowance for age or maturity when admitting pupils to junior high schools. The two-year systems are clearly the most conservative in this respect.

The desirability of the modified practice. The urgency of following such practice as is suggested in these quotations is apparent after a brief consideration of the relationship of that practice to the realization of the peculiar functions. It will retain many pupils in school who would otherwise be eliminated, as they will avoid the distaste of being associated with pupils much younger than they, and will do some work which will seem more vital to them than the

¹ An adaptation of Table V in William A. Smith's "Junior-High-School Practices in Sixty-four Cities."

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deadening repetition of the materials of a preliminary education whose value they cannot see. It will mean a saving of time for them, since they do not require almost exclusive training in the tools of education as much as contact with the materials of a more functional education. This need gains emphasis when we recall that many of them will soon no longer be in school, and that they already have some skill in the use of these tools. Such promotion *is* for them a recognition of individual differences. If they are not admitted to the junior high school, many of them must end their educational careers without the opportunities of exploration or the beginnings of vocational education. It is also a recognition of the nature of the child, since there is a high correlation between chronological and physiological age. The admission of such pupils will not tend to raise the average scholarship of the school which they enter, but it will be helpful in effecting a change of attitude toward school activities which should result in better work on the part of the individual pupils concerned. As regards this group of pupils also, the disciplinary situation and socializing opportunities will be improved. Their discontent with being taught in grades with children much younger and handled by methods appropriate to the earlier stages of development, all too commonly erupts as a trying disciplinary problem.

QUESTIONS AND PROBLEMS

1. What justification is there for referring to the function-feature relationship as the "heart of the junior-high-school problem"?

2. Why should the 6-2-4 plan be less provocative of thoroughgoing reorganization than the 6-3-3 plan?

3. Certain Southern states have operated on the 7-4 plan of organization. Assuming that it is desired in these states to

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continue to restrict the period of education below the college to eleven years, which arrangement would be likely to be most satisfactory, the 5-3-3, the 6-2-3, the 6-3-2, or the 6-5?

4. What problems are likely to arise in administering bases of admission like those recommended by the commission of the North Central Association of Colleges and Secondary Schools?

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V

THE PROGRAM OF STUDIES

IMPORTANCE OF THE PROGRAM OF STUDIES IN THE JUNIOR HIGH SCHOOL

The far-reaching significance of the program of studies of the junior high school for genuine reorganization is conceded by everyone who has followed the current of educational thought concerning this new institution. By many it is given first importance in the list of features of reorganization. Some go as far as to contend that it is almost the sole, if not the sole, occasion for junior-high-school reorganization. The tendency to regard it as of primary importance may be illustrated by reference to the tabulated opinions of "twenty-five Indiana school men actively engaged in the reorganization movement" as to which of eighteen "factors" were by them believed to be of greatest importance in the junior-high-school organization.¹ These men had been requested to number the "factors" in the order of importance. The tabulation gives the first four ranks to (1) the "reorganized courses of study," (2) the "opportunity for pupils to take more extensive offerings in prevocational subjects," (3) the "provision for greater differentiation of curricula than under the old conditions," and (4) "opportunities for some pupils to take some subjects of the high school earlier, as foreign languages or algebra." The fact that all these are *curricular* features

¹ H. G. Childs, *An Investigation of Certain Phases of the Reorganization Movement in the Grammar Grades of Indiana Public Schools*, pp. 12-13.

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may be seen to reflect the prevailing conviction of the extensive bearing of curricular progress upon educational reform through the junior high school.

This preëminence of curriculum improvement in current thought concerning the junior high school is shown again in the results of another balloting conducted by Briggs, in which sixty-one judges, including sixteen professors of education, eight officers in state departments of education, twenty superintendents of schools, and eighteen principals of junior high schools participated. These judges were asked to indicate which among a list of forty-four "items" they regarded as "essential." Of the first six items in a ranking by percentages of judges regarding them as essential, the first in order and two others (three in all) had to do with the curriculum. These were "providing curricula enriched beyond those commonly found for pupils twelve to sixteen years of age," "providing curricula flexible to suit individual needs," and "reorganizing courses of study so as to eliminate material justified for the most part only by traditional practice."¹

The significance of the curriculum in junior-high-school reorganization is great enough to warrant dealing with it at some length in this book. Three chapters are devoted to it, the present one dealing with the program of studies and its organization, and the next two dealing with the subjects of study to be found in the program of studies. Following these is a chapter on ability grouping which has vital relationships to curriculum improvement. Other chapters also cannot fail to touch on curriculum problems, at least incidentally.

¹ Thomas H. Briggs, "What is a Junior High School?" in *Educational Administration and Supervision* (September, 1919), Vol. V, pp. 283-301.

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1. THE SINGLE-CURRICULUM TYPE OF PROGRAM OF STUDIES

The types of programs of studies. A canvass of the programs of studies in operation in large numbers of junior high schools shows that they may be classified under four main forms, which we may designate as (1) the *single-curriculum type*, (2) the *pure multiple-curriculum type*, (3) the *constants-with-variables type*, and (4) the *combination types*. The type last named itself includes a number of types resulting from various combinations of any two or all of the first three named. The group to which a program belongs is usually readily discernible; it is only occasionally that it is difficult to determine which type it most resembles.

The relative frequency of use of the four types may be illustrated from the results of a recent examination of programs of studies sent in response to a request to principals of junior high schools to supply a copy of the program of studies in operation during the school year 1925-1926. The first 50 programs to come in, the cities represented being scattered from coast to coast, were grouped as follows: single-curriculum type, 3; pure multiple-curriculum type, 2; constants-with-variables type, 31; and combination types, 14.

Illustration of the single-curriculum type. The first of the types named, the single-curriculum, is provided, as just noted, in a relatively small proportion of schools. When offered, it is usually only in junior high schools composed of two grades, the seventh and eighth. Its make-up, ordinarily, is evidence that the 6-2-4 plan achieves little in the way of thoroughgoing reorganization, as may be inferred from the following program, which was in use in a Western city of medium size:

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SEVENTH GRADE		EIGHTH GRADE	
SUBJECT	PERIODS PER WEEK	SUBJECT	PERIODS PER WEEK
English	5	English	5
United States history and civics	5	United States history and civics	5
Arithmetic	3	Arithmetic	5
Geography	3	Physiology and hygiene . . .	3
Manual training or sewing . .	2	Manual training or cooking . .	2
Music	$\frac{1}{2}$	Music	$\frac{1}{2}$
Penmanship and spelling . .	$\frac{1}{2}$	Penmanship and spelling . .	$\frac{1}{2}$
Drawing	1	Drawing	1
		Physical training	1

According to this program, *all pupils take identical work*, except that boys have manual training while girls take sewing in the seventh grade and cooking in the eighth grade. Sometimes, without internal modification from what is implied by the names of subjects as just listed, other names are introduced, for example, "social science" for history and civics; "mathematics" for arithmetic; "science" for geography and physiology and hygiene; "industrial arts" for manual training, cooking, and sewing; and "art" for music and drawing. Although exception need not be taken to the use of these names, it is obvious that so to change them without genuine modification of content is far from effecting the real curriculum reorganization called for.

Evaluating the type. In this instance the content of the subjects listed is that usually found in these grades. It is manifest, therefore, that such a curriculum is only slightly better designed to achieve the peculiar functions of reorganization than are the most conservative elementary-school curricula for upper grades, and no whit better than the more progressive. It does little more toward retention and practically nothing to economize time. Its only recognition of individual differences is to be found in the manual

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training for boys and sewing and cooking for girls. The opportunities for exploration are likewise restricted and there is small provision for "general" vocational education. The advantage over the traditional curriculum for the recognition of the nature of the child, for securing better scholarship, and for improving the disciplinary situation and socializing opportunities is inconsiderable. In brief, the attainment of the ultimate aims of education, which the achievement of the peculiar functions is expected to accelerate, is hardly better encouraged by this program than by the usual elementary-school program. The only purpose that is likely to be adequately accomplished is the one most characteristic of the elementary school, namely, training in the fundamental processes. Thus, as far as concerns the program only, there is almost no defense for effecting reorganization in the school system in which this program is offered. Reform in content of the subjects listed would somewhat enlarge the opportunities to achieve the other purposes, but not enough to justify the type.

Some of the programs of this type in the junior high schools of the country are even more conservatively organized. Their ineptitude to the purposes of reform in education is so conspicuous as to make further demonstration unnecessary. *The only excuse for them will need to rest in their being a part of a first step toward reorganization in which several other significant features are simultaneously introduced.* Even under such conditions, the name "junior high school" seems inapplicable.

2. THE PURE MULTIPLE-CURRICULUM TYPE

The type described. The second type of program of studies, less frequently found now than formerly, includes those providing two or more fully prescribed curricula to

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be pursued by as many groups of pupils. It may be illustrated by quotation from the curricula for the eighth grade in a three-grade junior high school, the purposes of illustration not making necessary the reproduction of the complete program :

EIGHTH GRADE

Academic

English
History and geography
Science
Physical training
Algebra
Latin or French

Commercial

English
History and geography
Science
Physical training
Arithmetic
Typewriting
Bookkeeping

Home economics

English
History and geography
Science
Physical training
Arithmetic
Sewing or cooking
Interior decoration

Manual arts

English
History and geography
Science
Physical training
Arithmetic
Woodwork
Drawing

The work for seventh and ninth grades is similarly distributed, except that in the seventh the work is to a larger extent identical in all of the curricula.

The characterization "pure" as applied to this type should not be interpreted in a commendatory sense. It is used merely in the sense that the curricula, after once being elected, are fully prescribed. The only option of any sort in the example cited is in the academic curriculum, in which the pupil may elect either Latin or French. To this extent the illustration does not adhere strictly to the pure type. There are, of course, programs of studies conforming to the multiple-curriculum type and allowing for variability within the curricula, but these, for convenience, have

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been classed under combination types and will be considered in dealing with the fourth group.

The number of curricula offered by schools in which this type is in use varies. In an examination of a large number of its representatives one may find a few providing but two curricula, for example, the "general course" and the "practical-arts course." Five, six, or even more are found in use in some communities. For example, one may meet with a program listing curricula as follows: classical, academic, commercial, mechanic arts for boys, and domestic arts for girls; or again: literary-scientific, commercial, home economics, mechanic arts, engineering preparatory, and general elective.

The eighth-grade curricula cited demonstrate a characteristic common to almost all the programs of this type — they contain certain constant subjects and certain subjects peculiar to each curriculum. In the illustration, English, history and geography, science, and physical training are the constants, while algebra and Latin or French are peculiar to the academic curriculum; arithmetic, typewriting, and bookkeeping to the commercial; arithmetic, sewing or cooking, and interior decoration to the home-economics curriculum. The constants are sometimes taught with application to specializations suggested by the name given the curriculum. More often they are not.

This type of curriculum may not be intelligently evaluated without special recognition of the important implication that a pupil's enrollment in any one of the curricula is evidence that, in accordance with some decision, either his own or of those guiding him, he is to enter an occupation within the field comprehended or suggested by that curriculum. This inference has the support of expressions such as the following, occasionally to be found in literature descriptive of junior-high-school programs of this type:

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GENERAL COURSE

For those going to high school and to enter classical and scientific courses. Also for those who desire to prepare to enter colleges and universities for a professional career. . . .

COMMERCIAL COURSE

For those who desire to qualify as soon as possible as candidates for positions in the commercial and business world, or clerical service, typewriting, stenography, bookkeeping, and the selling trades. This course may be completed in two years or continued in the high school with profit.

VOCATIONAL COURSE

For those who desire to begin the study of the fundamental requirements of the various manufacturing and mechanical trades and professions. The immediate practical knowledge necessary for success in life will be emphasized in proportion to the number of years available for classroom study. . . . All students who have a limited amount of time for study and do not anticipate a high-school or college-preparatory course should enroll in this course.

The pure multiple-curriculum type evaluated. Despite the brief description of this type of program its superiority over the preceding type in realizing the peculiar functions of the junior high school is at once manifest. At most points where the single-curriculum offering is inadequate, the type now being considered affords promise of fulfillment. In comparison with the traditional curriculum of the upper grades we may with assurance expect it to hold pupils in school better. The presence of subjects not found in the traditional upper-grade program presages economy of time. For similar reasons it seems better adapted to recognizing the child's nature, to motivating him to effort that will result in his doing a better quality of work, and to improving for him the disciplinary situation and extending his

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socializing opportunities. It also has advantages along the lines of the beginnings of vocational education and, through its different curricula, of recognizing individual differences.

But with all its advantages over present-day upper-grade curricula and over the single-curriculum type of program, it harbors a danger too grave to be passed without challenge. *This danger lies in its failure to provide ample opportunity for exploration, and in what seems to be the assumption that this period in the pupils' school careers is one in which they have already fixed upon the general vocational groups, if not the specializations, which they will enter.* This assumption may be true of some pupils, especially those over age, but the ephemeral character of the occupational choices of the young children, and the impossibility of thus early assuring a satisfactory exploration of and by the pupils, brands this type of program as not fully appropriate.

On the other hand, its advocates contend that, as the program is usually administered, the pupil may usually without penalty shift from one curriculum to another, and often does so. They suggest further that the dangers are largely mitigated by the provision in some plans of elective subjects in addition to those prescribed in the curricula. But, *in spite of the fact that choice of curriculum may not be irrevocable, the presumption is against the facility of transfer from one to another.* There is likelihood, also, that too frequent changes will become irksome to those administering the program. The fact that some schools formerly having this type have shifted to another providing for electives is evidence that the plan has already proved inadequate, and that it breaks down in application because it is impossible to multiply curricula sufficiently to recognize all the individual differences in abilities and interests to be found in a group of pupils enrolled in seventh, eighth, and ninth grades.

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We must find a type of program more in harmony with our desire for a democratic school system and defer the type we have been discussing, if it must be used, to the senior-high-school grades from which it has been borrowed and where differentiation is more suitable after the function of exploration has been performed.

3. THE CONSTANTS-WITH-VARIABLES TYPE

The constants-with-variables type illustrated. The third form of program of studies, which we have termed the constants-with-variables type, is in use in an increasing proportion of junior high schools. The illustration of this type given here is drawn from a reorganized system in the Middle West:

SEVENTH GRADE

REQUIRED SUBJECTS (25 PERIODS)	PERIODS PER WEEK	ELECTIVE SUBJECTS (5 PERIODS)	PERIODS PER WEEK
English	5	Latin	5
Arithmetic	5	French	5
History	5	English composition	5
Physical education	3	Industrial arts	5
Industrial or household arts	3	Household arts	5
Music	2	Agriculture	5
Drawing	2	Commercial work	5
		Orchestra	2

EIGHTH GRADE

REQUIRED SUBJECTS (20 PERIODS)	PERIODS PER WEEK	ELECTIVE SUBJECTS (10 PERIODS)	PERIODS PER WEEK
English	5	Latin	5
Arithmetic	5	French	5
Geography and civics	5	English composition	5
Physical education	3	Industrial arts	5 or 10
Chorus or drawing	2	Household arts	5 or 10
		Agriculture	5 or 10
		Commercial work	5 or 10
		Drawing and design	5
		Music	5
		Orchestra	2

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NINTH GRADE

REQUIRED SUBJECTS (15 PERIODS)	PERIODS PER WEEK	ELECTIVE SUBJECTS (15 PERIODS)	PERIODS PER WEEK
English	5	Latin	5
General science	5	French	5
Physical education	3	Industrial arts	5 or 10
Chorus or drawing	2	Household arts	5 or 10
		Agriculture	5 or 10
		Commercial work	5 or 10
		Drawing and design	5
		Music	5
		Mathematics	
		Algebra	5
		Commercial arithmetic	5
		Industrial arithmetic	5
		Civics	5
		History	5
		Orchestra	2

According to the plan of organization of this type of program, there are certain constant subjects pursued by each pupil enrolled in a grade, and certain variable subjects from which he, with the coöperation of those guiding him, selects enough work to make for him a full curriculum. It is like the multiple-curriculum type in its requirement of constants. It is different in that, instead of adding fixed subjects peculiar to each curriculum in the program, it allows for much greater variety of curricular make-up, permitting the pupil to come in contact with a wider range of variable subjects. *A basic assumption in framing it is that the pupil may not, by the time he enters upon the work of these grades, have made a permanent occupational choice.*

Because the type is so frequently found, it is worth while to illustrate it more fully by reproducing additional examples. An interesting instance, because it contains at least one novel feature, is to be found in the program of studies in operation in the junior high schools of Oklahoma City, Oklahoma. It is as follows:

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SEVENTH GRADE

CORE SUBJECTS (5 UNITS)

English
Geography ($\frac{1}{2}$)
Social science
Mathematics
Penmanship and spelling ($\frac{1}{2}$)
Physical training

ELECTIVE SUBJECTS (1 UNIT)

(Nine-weeks finding and broadening courses. The four finding and broadening courses must be chosen from at least three different groups)

Fine arts	Languages
Music	Modern language
Art	English-Latin
Public speaking	Commercial
Science	Office practice
General science	Shorthand
Radio	Typewriting
Industrial arts	Bookkeeping
Manual training	Household arts
Mechanical drawing	Millinery
Bricklaying	Costume-designing
Automobile mechanics	Home management
Plumbing	Cooking

EIGHTH GRADE

CORE SUBJECTS (4 UNITS)

English
Social science
Mathematics
Physical training

ELECTIVE SUBJECTS (2 UNITS)

Public speaking
Penmanship and spelling
Bookkeeping
Typewriting
General science
Art
Music
Orchestra
Domestic art
Domestic science
Manual training
Mechanical drawing

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NINTH GRADE

CORE SUBJECTS (3 UNITS)

English
Social science
Mathematics

ELECTIVE SUBJECTS (3 UNITS)

Public speaking
Penmanship and spelling
Bookkeeping
Typewriting
Latin
French
Spanish
Physical geography
Geology
Art
Music
Orchestra
Domestic art
Domestic science
Manual training
Mechanical drawing
Physical training

A feature of this program is the "finding and broadening courses" listed as variables in the seventh grade. Each of these is nine weeks in length, the pupil electing four of them during his progress through this grade. He is required to make contact with at least three of the six main fields represented in the course, namely, fine arts, science, industrial arts, languages, commercial subjects, and household arts. As in the preceding example of this type, the proportion of "core," or constant, work decreases regularly from grade. The proportion of variable work must be correspondingly large. Adapted to this arrangement is the list of elective subjects, which, although already long in the eighth grade, is even longer in the ninth grade.

Still another illustration of the constants-with-variables type is to be found in use in the junior high schools of Cleveland, Ohio:

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GRADE VII B

REQUIRED	PERIODS PER WEEK
English	10
Mathematics	5
Geography	5
History and social problems	4
Physical education	2
Hygiene	1
Music	1
Art	2
Shop and drawing	4
Home economics	4

GRADE VII A

REQUIRED	PERIODS PER WEEK
English	5
Mathematics	5
Geography	5
History and social problems	4
Physical education	2
Hygiene	1
Music	1
Art	2
Shop and drawing	4
Home economics	4

ELECTIVES (5 OR 6 PERIODS)

English	5
Latin	5
French	5
Spanish	5
Commercial	5
Shop and drawing	6
Home economics	6

GRADE VIII B

REQUIRED	PERIODS PER WEEK
English	5
Mathematics	5
Social science	4
Physical education	2
Hygiene	1
Music	1
Art	2
Vocations	1
Shop and drawing	4
Home economics	4

ELECTIVES (5 OR 6 PERIODS)

English	5
Latin	5
French	5
Spanish	5
Commercial	5
Shop and drawing	6
Home economics	6

GRADE VIII A

REQUIRED	PERIODS PER WEEK
English	5
Mathematics	5
Social science	4
Physical education	2
Hygiene	1
Music	1
Art	2
Vocations	1
Shop and drawing	4
Home economics	4

ELECTIVES (5 OR 6 PERIODS)

English	5
Latin	5
French	5
Spanish	5
Commercial	5
Shop and drawing	6
Home economics	6

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GRADE IX B

REQUIRED	PERIODS PER WEEK
English	5
Mathematics	5
Music	2
Physical education	2

ELECTIVES (10 TO 16 PERIODS)

Social science	5
Latin	5
French	5
Spanish	5
General science	5
Applied art	6-10
Shop and drawing	10-16
Home economics	10
Penmanship	5

GRADE IX A

REQUIRED	PERIODS PER WEEK
English	5
Mathematics	5
Music	2
Physical education	2

ELECTIVES (10 TO 16 PERIODS)

Social science	5
Latin	5
French	5
Spanish	5
General science	5
Applied art	6-10
Shop and drawing	10-16
Home economics	10
Bookkeeping	5

The distinctive thing here, as concerns organization of the program, is the lack of any election during the first half of the seventh grade. This is in line with the belief in some circles that, in junior high schools with large enrollments where the task of guiding entering pupils is so huge as to be prohibitive, they should be given some time to become orientated in the new school situation before election is opened up to them.

This program directs attention to the large proportion of junior high schools following those modifications of the constants-with-variables type of program of studies in which the pupils are allowed no freedom of election until the opening of the eighth, or even of the ninth grade. Thus, of the 31 programs of studies (in a total of 50) above referred to as belonging to this type, 6 do not open up elections before the eighth grade, and 8 more do not do so before the ninth grade. Although more than half of the 31 do provide for some election in the seventh grade, a large proportion have not seen fit to do so. To what extent con-

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servatism in this respect may go is shown in the following program in use in a city of good size in the Middle West:

SEVENTH GRADE		EIGHTH GRADE	
	PERIODS OF 50 MIN.		PERIODS OF 50 MIN.
English	3	English	5
Literature	2	Literature	2
Arithmetic	5	Arithmetic	5
United States history	5	United States history and com-	
Geography	5	munity civics	5
Physiology	2	General science	5
Drawing	1	Drawing	1
Music	1	Music	1
Shop (boys)	2	Shop (boys)	2
Sewing (girls)	2	Cooking (girls)	2
Penmanship	1	Penmanship	1
Spelling	1	Spelling	1
NINTH GRADE			
REQUIRED		ELECTIVE	
English	5	Latin	5
Algebra or commercial arith-		French	5
metic	5	Biology	5
Music, drawing, or penmanship	2	European history	5
Physical education	2	Civics	5
		Shop	5
		Household arts	5

One may well question whether effort at program revision as restricted as this is justifies junior-high-school reorganization. *In only minor respects does it differ in seventh and eighth grades from the arrangement of the offering in the upper grades of the eight-year elementary school, and it does not provide for variability until the opening of the ninth grade — just where variability begins in schools organized on the 8-4 plan!* One justification that could be mustered for such meager reorganization would be the fact that a school operating the plan had only recently been organized, and that thoroughgoing reorganization was to follow.

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Evaluating this type of program of studies. Careful scrutiny of the better examples of this type of program will discover that it has all the advantages in the realization of the peculiar functions possessed by the multiple-curriculum program, and more. It will retain pupils, economize time, provide the beginnings of vocational education, recognize the child's nature, encourage better scholarship on the part of the individual pupil, and improve the disciplinary situation and socializing opportunities just as well or even better than does the second type. At the same time it *remedies the serious deficiency of the latter by making possible the performance of the function of exploration and guidance, a function too important to be disregarded* at this time in the child's school life. In addition it will tend to recognize individual differences more satisfactorily by permitting a much wider variation of combinations of subjects in the making of curricula.

Its only deficiency when compared with the multiple-curriculum program is its greater difficulty of administration. Because in the constants-with-variables type of program the curricula of pupils for each semester or each year are not so predictable as in the second type, more time and effort must be given to advising with pupils concerning their curricular plans. The problem of making daily and weekly programs also becomes more intricate. However, in questions where the two are involved, educational needs must take precedence over administrative convenience, especially where the former has such vital contact with the realization of a democratic school system as is here involved.

The use of this third type of program does not preclude the desirability of mapping out, especially for the over-age pupils or others who may have discriminatingly come to a decision upon a line of specialization which is to be begun,

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suggestive curricula adapted to the attainment of the ends the pupils have in mind. Such curricula will be found helpful in advising pupils and parents regarding work to be taken.

4. COMBINATION TYPES OF PROGRAMS OF STUDIES

Examples of combination types. 1. *The combination of multiple-curriculum and constants-with-variables types.* One type of program of studies sometimes found in junior high schools is what may be designated as a combination of the pure multiple-curriculum type with the constants-with-variables type. It may be described best by illustration. In a Western city operating this type there are several curricula open to junior-high-school pupils, one of which is the "literary." In the eighth grade of this curriculum the arrangement of work is as follows:

GRADE VIII B		GRADE VIII A	
	PERIODS		PERIODS
English	5	English	5
History	5	History	5
Mathematics	5	Mathematics	5
Latin, French, or Spanish . .	5	Latin, French, or Spanish . .	5
Physical education	5	Physical education	5
Music, oral English	5	Civics, occupations	5
Shop, food, printing, typewriting, free-hand or mechanical drawing, or penmanship . .	5	Shop, clothing, printing, typewriting, free-hand or mechanical drawing, or penmanship	5

It may be seen that the subject distinctive of this academic curriculum — the "curriculum variable" — is foreign language, the pupil being required, if he elects this curriculum, to take either Latin, French, or Spanish. It is apparent that this distinctiveness and the existence of the different curricula (others being commercial, general, manual arts, etc.) label this as the multiple-curriculum type. However,

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the example deviates from the *pure* multiple-curriculum type by providing also for election: the pupil chooses five periods of work from a rather wide variety of additional subjects. This fact brings in the characteristic of the constants-with-variables type. It is probably needless to state that the latter characteristic goes far to remove the defect of the pure multiple-curriculum type pointed out above,—the failure to provide ample opportunity for exploration and to avoid the tacit assumption that this period in the pupils' school careers is one in which they have already fixed upon the vocational groups, if not the specializations, which they will enter. The provision of several curricula after this manner, with some freedom of election in each so as to allow for contacts with special fields *other* than that peculiar to each curriculum, especially if this is accompanied by facility of transfer of pupils from one curriculum to another, may accomplish all that can be accomplished with the constants-with-variables program and be somewhat more easily administered as well. It would be imperative, of course, that the elective portions and the permission to transfer from curriculum to curriculum be a part of the plan, since without these features certain important special purposes of the junior high school would be defeated.

2. *The combination of single-curriculum and multiple-curriculum types.* Another combination type is one which during the first year or two of the three-year period sets up a single curriculum to be pursued by all, and during the last year or the later years gives the pupil his choice of two or more curricula. A system which has used this plan for a number of years is Detroit. The accompanying tabulation sets forth the plan as published in 1922.¹ The present

¹ C. L. Spain, A. B. Moehlman, and H. L. Harrington, The Intermediate School in Detroit, *Detroit Educational Bulletin* No. 6 (October, 1922), p. 13.

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writer has been informed of certain changes in the distribution of the periods made since that date, such as a reduction in Grades VIII A and IX B for the portion designated as "auditorium," the time thus available being given to English and mathematics, and other changes. The type of

TABLE XVI. PROGRAM OF STUDIES FOR INTERMEDIATE SCHOOLS OF
DETROIT, 1922

SUBJECTS	SEVENTH GRADE		EIGHTH GRADE				NINTH GRADE			
	B	A	Gen- eral	Technical		Com- mer- cial	Gen- eral	Technical		Com- mer- cial
				Boys	Girls			Boys	Girls	
Health	5	5	5	5	5	5	5	5	5	5
Social science	5	5	5	5	5	5	5	5	5	5
English	5	4	4	4	4	4	4	4	4	4
Mathematics	4	4	3	3	3	3	3	3	3	3
General science	3	2	2	2	2	2	2	2	2	2
Auditorium	2	2	2	2	2	2	2	2	2	2
Music	1	1	1		1	1	1		1	1
Art and design	1	1	1	1	2	1	1		2	1
Foreign language			5				5			
Cooking (girls)	2	3	1		}6{	1	1		}6{	
Sewing (girls)	2	3	1			1	1			
Household science (girls)										
Shop (boys)	3	5	1	6		1	1	6		
Mechanical drawing (boys)	1	1	1	2		1	1	3		
Bookkeeping										5
Business practice						5				}5
Statistics										
Typewriting										
<i>Total</i>	30	30	30	30	30	30	30	30	30	30

organization has, however, not been changed, and still is a combination of the single-curriculum type in the seventh grade with the pure multiple-curriculum type in eighth and ninth grades. The authors of the bulletin describing the program have the following to say concerning its make-up :¹

¹ Charles L. Spain, Arthur B. Moehlman, and H. L. Harrington, *The Intermediate School in Detroit*, *Detroit Educational Bulletin* No. 6 (October, 1922), p. 12.

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No differentiation is provided for in the seventh grade, except in so far as offering shop work and mechanical drawing to the boys and home economics to the girls constitutes differentiation. There are no electives in the seventh grade, but a wide variety of curricular experience is prescribed for all pupils. In vocational subjects this variety is greater in 7 A than in 7 B.

In the eighth and ninth grades the work is divided into four curricula. It is planned at the beginning of the eighth grade to begin a rough differentiation among pupils, upon the basis of work done in the seventh grade and upon the results of the study of each individual case by the educational and vocational counselor. Under guidance, the pupil is here allowed the choice of:

1. A general curriculum, intended for those pupils who will go on to enter one of the cosmopolitan high schools.

2. A technical curriculum, designed for those boys who will probably go on to the vocational high school or who will enter industry directly from the intermediate school.

3. A technical curriculum, designed for girls who probably will not enter the cosmopolitan high school, but will go out directly into industry.

4. A commercial curriculum, designed for pupils who will probably become office workers.

All the work in each curriculum is prescribed. There are no electives within a curriculum except that, within the vocational subjects, a choice is allowed. The traditional subjects and health education are held constant, or nearly so, as in the case of mathematics, throughout all curricula, the chief variation coming in the vocational subjects and in the inclusion or omission of foreign languages.

Description of this intermediate-school program should not be concluded without reference to the curriculum for Smith-Hughes classes. The following statement is made concerning this curriculum:¹

¹ Charles L. Spain, Arthur B. Moehlman, and H. L. Harrington, *The Intermediate School in Detroit*, *Detroit Educational Bulletin* No. 6 (October, 1922), p. 12.

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Paralleling the program outlined for grades seven, eight, and nine is the industrial curriculum. This conforms to the requirements necessary for receiving national and state aid under the Smith-Hughes law, and is designed for students (1) who are of such a character as to be better able to profit by industrial work than by the regular work of grades seven, eight, and nine, whether or not they have finished the elementary work usually prescribed for entrance to the intermediate school, and (2) students who for various reasons may be able to remain only a short time in school and who need short, intensive courses of training before entering industry.

To regard this special curriculum as a part of the intermediate-school offering makes of the type in use in Detroit essentially pure multiple-curriculum type throughout all three grades of the intermediate unit, since the curriculum is distinct in organization from that set up for all other pupils, even in the seventh grade. For present purposes it will not be so considered, especially as the main emphasis in the exposition from which quotation has been made is on the portions previously described.

Before any evaluative statement concerning this program of studies is made, a further quotation will be given from the bulletin, one which emphasizes in highly commendable terms the distributive or guidance service now so much in the mind of those who are concerned with the junior high school : ¹

The unique and special function which the intermediate school, as opposed to education on other levels, should exercise is that of aiding the pupil to find his place in society. The years of early adolescence are years of exploration, in which the pupil tries out his abilities, capacities, and aptitudes, and discovers his likes and dislikes. That he may do this in as satisfactory

¹ Charles L. Spain, Arthur B. Moehlman, and H. L. Harrington, *The Intermediate School in Detroit*, *Detroit Educational Bulletin* No. 6 (October, 1922), p. 12.

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a manner as possible the curriculum at this level must be varied and inclusive. The elementary school has given him a certain mastery of the fundamentals which are a common necessity for all pupils; before he enters the senior high school, the student's life career has been determined within certain broad limits, and his education here is specifically directed to contribute to preparation for this career, but, in the intermediate school the choice of a career is in most cases being determined, hence the necessity for a varied offering, so that the pupil may by actual experience and under wise guidance determine where his interests lie, and what his capacities are, in various fields.

Because the two types of programs of studies, of which the one in Detroit may be considered a composite, have already been considered above, the evaluative comments may be kept within brief space. On the positive side the same favorable things may be said for it as have been said for the pure multiple-curriculum type, in that it does provide for differentiation at a time when some differentiation is desirable. Then, too, some exploration is provided by electives within the broad occupational groups represented, especially in the industrial and commercial curricula. As far as there are limitations, these also were suggested in the treatment of single-curriculum and pure multiple-curriculum types referred to, except for the exploration just mentioned. The excellent philosophy of exploration quoted prompts the query as to whether the pupil's range of contacts is kept too closely within one large occupational group. For instance, the pupil taking the technical curriculum has no opportunity (without shifting to another curriculum) of contact with commercial content, or the pupil in the commercial curriculum with foreign language. We are probably correct in assuming for this particular situation, as for certain others following a similar plan, that great care is used in distributing pupils to the different curricula and that some opportunity is given the

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pupil to shift from one curriculum to another. Without great care in distributing pupils and freedom of shifting, premature specialization would be sure to result. Not even the large enrollments of urban junior high schools should be accepted as an obstruction, particularly on account of the great importance of the proper discharge of the guidance function. In this particular situation the one year in which all pupils take the same work allows time for getting acquainted with them so as better to distribute them to the different curricula.

Only a poor case can be made for another variant of this composite type sometimes encountered by the student of junior high schools, one which provides a single curriculum during seventh and eighth grades and delays the introduction of the multiple-curriculum constituent to the ninth grade. An example of this is a junior high school of three grades in which the work of the first two grades is identical for all pupils excepting for slight differentiation for boys and girls, and which in the ninth grade opens up to the pupil election of one of three curricula, namely, the classical, the scientific, and the practical arts. The chief defect of this program is one too commonly found in junior high schools, that *it comprehends little or no modification of the conventional arrangement which prescribes, without opportunity for differentiation, all the work in the seventh and eighth grades, and which does not afford opportunity for differentiation of curricula until the first year of the four-year high school.* It is fortunate for the service renderable by the new unit that this plan is followed in only a small proportion of schools.

3. *The combination of single-curriculum, constants-with-variables, and multiple-curriculum types.* An interesting composite type sometimes encountered in junior units is one which is made up in part of elements of *all three* of the

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basic types first described in this chapter. These set up a single-curriculum in the seventh grade, a constants-with-variables program in the eighth grade, and then offer the pupil a choice of two or more differentiated curricula in the ninth grade. Usually these curricula in the ninth grade are not of the sort designated as pure, — that is, being fully prescribed, — for in addition to containing the constants and certain curriculum variables, they afford the pupil some option in making up his full quota of subjects. The assumption is that the variability in the eighth-grade offering gives the pupil a better basis on which to select his ninth-grade curriculum. If the list of subjects in the seventh grade affords opportunities for try-out, as is possible even when the work is all prescribed, and if the offerings in the eighth grade and the ninth grade are also properly planned, this tripartite type of program may be made to serve well the purposes of junior-high-school education.

More than one type adaptable to junior-high-school purposes. One appropriate conclusion from this consideration of the types of programs of studies is that more than a single type may be molded to the needs of junior-high-school reorganization. The one which most patently commends itself is the constants-with-variables type. But certain combination types also with proper adjustments have been found to be suitable, namely, the combination of multiple-curriculum and constants-with-variables, and the combination of single-curriculum, constants-with-variables, and multiple-curriculum (with variability) applied respectively to the three junior-high-school grades. Programs least suitable are those which lean too heavily toward the single-curriculum and pure multiple-curriculum plans. From this summary one may also infer that the program easiest of administration may not be the best suited to junior-high-school needs. Discharge of the func-

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tion of guidance must be accompanied by frequent adjustment and readjustment, and it may well be that both will be obstructed by a simple but rigid program. No matter how great the difficulty of administration, the junior high school will not be able to shirk this responsibility for guidance as far as it is dependent upon the proper plan of curriculum organization.

SUBJECT ANALYSES OF PROGRAMS OF STUDIES

Douglass's tabulation. A method of inquiry helpful in ascertaining the extent of reform in curriculum organization being effected by the junior high school is the tabulation of the frequencies with which the subjects and subject groups make their appearance in each of the grades represented. Three such studies will be drawn upon here: one reported by Douglass,¹ another by Rodgers,² and a third by Tryon and others³ (referred to for comparison only). The first was made some years ago, but a comparison of the data with those assembled by the second investigation shows that the findings are still somewhat representative of the situation today. The results of Douglass's tabulations are shown in Fig. 19, which sets forth for convenient comparison the percentages of junior high schools which, in about the year 1914-1915, (1) prescribed, (2) offered for election, or (3) did not offer at all work in certain subject groups. In order to make the significance of the figure more readily apparent, it should be stated that, as tabulated by Douglass, "English" includes one or more of

¹ Aubrey A. Douglass, "The Junior High School," *The Fifteenth Yearbook of the National Society for the Study of Education* (1916), Part III, pp. 77-83.

² J. Harvey Rodgers, "Junior-High-School Curricula and Programs," *School Review* (March, 1921), Vol. XXIX, pp. 198-205.

³ R. M. Tryon, H. L. Smith, and Allan F. Rood, "The Program of Studies in Seventy-eight Junior-High-School Centers," *School Review* (February, 1927), Vol. XXXV, pp. 96-107.

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the following divisions or designations of the subject, namely, English, reading, grammar, spelling, and penmanship; the "social sciences" include history, civics, geography, and combinations of these subjects; "mathematics" includes mathematics, algebra, and arithmetic; "sciences" include general science, agriculture, physiography, and biology; "foreign languages" include Latin, German, Spanish, French, Swedish, and Italian; "hygiene" includes physiology, hygiene, and physical training; "art" includes fine arts, music, drawing, and free-hand drawing; "industrial arts" include industrial arts, manual training, survey of vocations, industrial science, industrial history, printing, domestic science and art, interior decoration, dressmaking, design, and mechanical drawing; and "commerce" includes typewriting, commercial or industrial arithmetic, commercial or industrial geography, shorthand, business practice, commercial English, book-keeping, and commercial law. The reader should be careful not to infer that when a particular school situation was credited with having a particular subject group in its program it offered *all* the members of that group. The appearance of a single division of the group in a school called for counting the school as offering work in that division; for example, a school was counted as making "hygiene" available in some grade if it required or offered either hygiene, physiology, or physical training, or both hygiene and physical training.

Examination of Fig. 19 leads to three among a number of inferences that may be drawn without exhausting the significance of the data presented:

1. *Some junior high schools were breaking with tradition in seventh and eighth grades in the matter of subjects made available, either as required or as elective materials, in the total offering.*

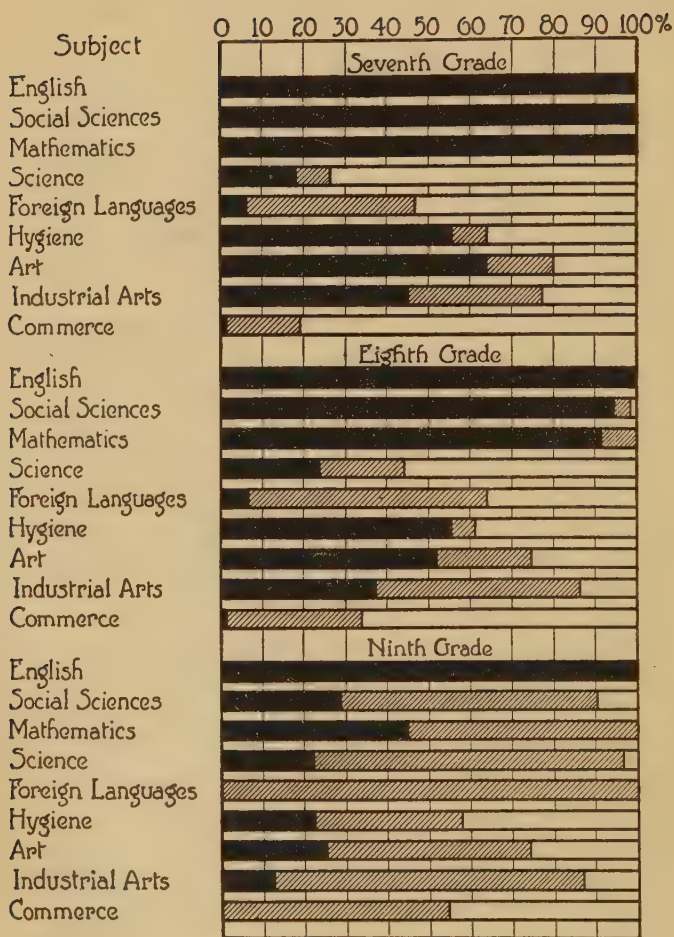


FIG. 19. Percentage of junior high schools requiring, offering for election, and not offering work in certain groups of subjects. (After Douglass.) (Black, requiring; shaded, offering for election; in outline, not offering)

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2. On the other hand, *many schools were still adhering to conventional practices* in this regard. This conclusion has the support of the original table of subject lists presented by Douglass, but which is not reproduced here.

3. *With too small a proportion of exceptions there was the usual sudden shift between eighth and ninth grades in the subjects required and made variable*, showing that anything approaching thoroughgoing modification in this respect was being achieved sometimes, but too infrequently to afford all desirable encouragement to reorganization.

No doubt the unfavorable condition was contributed to by the large proportion of two-year junior units included in the study, since we have found the schools that include only the last two elementary-school grades less disposed to make far-reaching changes. But these cannot account for all the conservatism disclosed.

Rodgers's tabulations. The second study to be drawn upon has the advantages of having been made some years after the first. Its findings were reported in three main divisions: (1) a tabulation of the constant and variable subjects in junior high schools, 33 in number, including only Grades VII and VIII; (2) a tabulation of constant and variable subjects in junior high schools, 67 in number, comprising Grades VII, VIII, and IX; and (3) a tabulation of the required and elective subjects of study in the 34 junior high schools comprising Grades VII, VIII, and IX which had set up what Rodgers designated as "differentiated curricula." The findings for these divisions are shown respectively in Tables XVII, XVIII, and XIX. Examination of the first of these tables may be seen to warrant the investigator in drawing several conclusions, among which are the following: ¹

¹ J. Harvey Rodgers, "Junior-High-School Curricula and Programs," *School Review* (March, 1921), Vol. XXIX, p. 201.

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1. In the main the subjects required in junior high schools of the two-grade type are much the same as those found in a good elementary school. . . .

4. In junior high schools of the two-grade type variables (elective studies) are more conspicuous for their absence than for their presence. Where found, they are predominantly in one or more foreign languages, those studies constituting 54 per cent of the gross number of variables reported. Foreign languages and manual training or domestic science combined constitute more than three fourths of the gross number of variables reported.

TABLE XVII. DISTRIBUTION OF CONSTANTS AND VARIABLES IN THIRTY-THREE JUNIOR HIGH SCHOOLS COMPRISING GRADES VII AND VIII.

SUBJECTS	CONSTANTS				VARIABLES			
	Grade VII		Grade VIII		Grade VII		Grade VIII	
	<i>First Half</i>	<i>Second Half</i>	<i>First Half</i>	<i>Second Half</i>	<i>First Half</i>	<i>Second Half</i>	<i>First Half</i>	<i>Second Half</i>
English	33	33	33	33				
Spelling	10	10	10	10				
Penmanship	10	10	10	10				
Literature	9	9	8	8				
Arithmetic	28	28	27	27				
General mathematics . .	5	5	3	3				
Algebra			2	2			2	2
United States history . .	28	28	28	27				
Civics	5	5	12	16				
Political geography . . .	26	26	13	13				
Physiology	18	18	9	8				
Physical training	12	12	12	12				
Music	16	16	15	15	1	1	1	1
Drawing	19	19	16	16	1	1	2	2
General science	4	4	15	17			1	1
Manual training	17	17	20	20	3	3	4	4
Domestic training	21	21	23	23	6	6	9	9
Latin	1	1	2	2	2	2	10	10
French	1	1	2	2	3	3	11	11
Spanish					3	3	9	9
Italian							1	1
Bookkeeping			1				6	6
Typewriting							2	2
Vocations			2	2				

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TABLE XVIII. DISTRIBUTION OF CONSTANTS AND VARIABLES IN SIXTY-SEVEN JUNIOR HIGH SCHOOLS COMPRISING GRADES VII, VIII, AND IX

SUBJECTS	CONSTANTS						VARIABLES					
	Grade VII		Grade VIII		Grade IX		Grade VII		Grade VIII		Grade IX	
	First Half	Second Half	First Half	Second Half	First Half	Second Half	First Half	Second Half	First Half	Second Half	First Half	Second Half
English	67	67	67	67	67	67						
Arithmetic	43	43	30	28	3	2			2	2	9	9
General mathematics	24	24	19	20	11	11					1	1
United States history	45	45	49	49	2	1			1	1	2	2
Political geography	52	48	17	15	2	2			2	2	1	1
Domestic science	44	48	29	28	8	8	7	7	17	20	26	27
Manual training	45	47	24	24	8	8	8	8	13	16	26	27
Physical training	48	48	47	47	32	29					1	1
Music	47	47	31	30	13	13	5	5	10	8	12	12
Drawing	45	42	20	19	5	5	7	7	18	16	18	18
Penmanship	33	33	18	18	2	2	7	7	1	1	1	1
Physiology	18	18	10	9	2	3					4	4
General science	10	10	10	10	14	12					6	6
Spelling	19	19	16	16	5	5						
Sewing	15	15	9	9	2	2	1	1	2	2	5	5
Civics	9	9	9	9	10	12					6	8
Literature	6	6	4	4	1	1			1	1	1	1
Latin				2	2	2	15	15	18	19	34	34
French					1	1	16	16	18	18	20	20
Spanish					1	1	13	13	19	19	18	18
Bookkeeping			1	1	1	1	1	1	3	4	4	4
Shop experience	7	7	5	5			2	2	4	4	4	4
Vocations			1	2	3	6					1	1
Algebra			8	7	14	13			2	3	7	7
Mechanical drawing	2	2	1	1					2	2	2	2
Ancient history	1	1	1	1	3	3			1	1	9	9
Stenography									2	2	5	5
Typewriting							6	6	8	8	7	7
Agriculture							1	1	2	2	3	3
Physical geography					2	2			1	1	2	2

One may judge from the Rodgers table above (XVIII) that a considerable portion of three-year junior high schools were making an approach to generous lists of variables. At the same time he is warranted in the following conclusions:¹

¹ J. Harvey Rodgers, "Junior-High-School Curricula and Programs," *School Review* (March, 1921), Vol. XXIX, p. 201.

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Even in junior high schools of the three-grade type apparently there is a relative scarcity of variables. For the most part the variables offered are domestic science or manual training, foreign languages, drawing, and music. . . .

Except for domestic science and manual training, practical-arts subjects are far from common in the junior high schools studied. In most schools elective work is practically limited to domestic science or manual training and the foreign languages, with here and there some provision for commercial studies. Ancient history and algebra are more commonly offered than shop work.

The differentiated curricula Rodgers found most frequently offered in junior high schools were classifiable as "academic," "commercial," and "practical-arts." These he analyzed, his results being shown in the last of the group of three tables, XVII, XVIII, and XIX. From the table as reproduced have been omitted subjects appearing in no column of Rodgers's tabulation with a frequency greater than four. These subjects, with their greatest frequency of appearance in any column, are "practical arts," 4; "business practice," 3; "social study," 2; biology, 2; physics, 1; economics, 1; agriculture, 1. The reader interested in mapping out such curricula will do well to examine the subjects listed in the table and the frequency with which they are either required or made elective. At the same time, he will need to be on his guard against accepting typical practices as models, since, as Rodgers concludes from the data he presents, (1) there are few significant differences among the subjects required in the three curricula, and (2) "the assumed differentiation of curricula exists more in name than in practice."¹

A further conclusion that may be drawn from the second and third of this group of three tables is one which may be

¹ J. Harvey Rodgers, "Junior-High-School Curricula and Programs," *School Review* (March, 1921), Vol. XXIX, pp. 202-203.

TABLE XIX. DISTRIBUTION OF REQUIRED AND ELECTIVE STUDIES IN THIRTY-FOUR JUNIOR HIGH SCHOOLS COMPRISING GRADES VII, VIII, AND IX WHICH HAVE DIFFERENTIATED CURRICULA

SUBJECTS	ACADEMIC CURRICULA						COMMERCIAL CURRICULA						PRACTICAL-ARTS CURRICULA					
	Required			Electives			Required			Electives			Required			Electives		
	VII	VIII	IX	VII	VIII	IX	VII	VIII	IX	VII	VIII	IX	VII	VIII	IX	VII	VIII	IX
English	34	34					31	31	31				34	34	34			
Arithmetic	12	7		1			12	9	16	8			12	6	1	1		
General mathematics	22	25					19	14	12	8			22	25	17	2		
United States history	23	30					20	27					23	34				
Political geography	28	10		3			28	14					28	11	1	3		1
Domestic science	26	14		25			24	13					19	12	7	9		11
Manual training	27	15		12			26	21					21	12	9	9		10
Physical training	31	31		1			28	28					31	31	28	1		1
Music	33	27		1			30	27					32	21	25	1		2
Drawing	32	15		12			28	12					31	16	14	1		5
Penmanship	21	5					12	1					2	8	4			
Physiology	12	4					11	11					12	1	1			
General science	12	12		10			11	11					12	15	18	2		14
Civics	4	17		8			4	20					14	23	6			4
Spelling	8	4					8	4					7					1
Latin	2	3																1
French				20			2	1										7
Spanish				11														1
Literature				19			7	9										1
Vocations	8	14		1				4					6	3		3		6
Algebra		9		2				2					1	10	4			5
Mechanical drawing		1		1			3	13					5	16	15	2		
Ancient history		5		1			1											5
Typewriting		4														1		2
Bookkeeping		1		1				2							4			1

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drawn also from the data presented by Douglass, that is, the persistence of a sudden shift in representation of subjects between the eighth and ninth grades somewhat similar to that obtaining between them in schools organized on the 8-4 plan. While some junior high schools are "bridging the gap" by a more gradual shift from one grade to the next, by means of effecting significant changes in seventh and eighth grades, others are doing little or nothing in curricular ways to transmute this three-year period into a transitional unit of the school system.

The analysis by Tryon and others. The third of the analyses of junior-high-school programs to be referred to here was based upon materials collected in 1925-1926.¹ The lists of subjects of study and the frequencies with which they were reported, when compared with those of the two studies already drawn upon, give an impression of considerable progress in the intervening period of years and some assurance of an increasing recognition in the curriculum of the meaning of the movement. At the same time they show that in many schools little if anything in the way of curriculum reform has been achieved.

The suggestions to be made in the next section are directed toward a realignment of subjects that will effect for the pupil a more gradual progression from grade to grade, at the same time correcting other deficiencies just shown, and otherwise being in harmony with basic policies appropriate for junior-high-school reorganization. Whatever may be the causes, the facts just presented indicate that these basic policies are too often neglected and that therefore the junior high schools miss their mark.

¹ R. M. Tryon, H. L. Smith, and Allan F. Rood, "The Program of Studies in Seventy-eight Junior-High-School Centers," *School Review* (February, 1927), Vol. XXXV, pp. 96-107.

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THE CONSTANTS AND VARIABLES IN THE PROGRAM OF STUDIES

The proportions of constants and of variables. Having considered the type of program of studies appropriate for the junior high school, and the practices with regard to subject representation in the program, our next concern is properly the determination of the constants and variables in the array of subjects. These must be chosen in such a way that the program will qualify on the criteria already posited, namely, the accomplishment of the aims of secondary education, of the more proximate aim of training in the command of the fundamental processes, and of the peculiar functions of the junior high school.

Before turning directly to the task in hand it is advisable to consider briefly the portions of the program as a whole which may be appropriately assigned to constant and to variable subjects. No rigid rule can be laid down, but at least a desirable general policy may be formulated. The chief elements of this policy should be that *variability should begin early in the junior high school and increase from grade to grade*. These two elements are often but, unfortunately, not consistently recognized in making up junior-high-school programs.

Some idea of the point of *beginning* of variability (or possibility of differentiation) in junior-high-school programs may be gained from the results of a study in this respect of the sample of 50 programs referred to earlier in this chapter. Of the 50 programs, 23, or slightly less than half, provided for *some* opportunity for variability (not including extra-curricular activities) in the seventh grade, that is, the first grade in the new unit. To this number 12 were added in the eighth grade, making 35 programs, or well over two thirds of all. In the ninth grade, all but 3 of

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the 50 programs provided opportunity for some variability or differentiation, but since this is the grade where it is usually begun in the conventional school organization, this last fact is not to be looked upon as at all remarkable. It is sometimes contended, on the one hand, that in small junior high schools with restricted offerings it is not practicable to offer more than the single curriculum of constant work in the seventh grade; and on the other hand, that in junior high schools with very large enrollments it is inadvisable to open up election until after the pupil has been in attendance at least half a year or a year. Even if this is conceded, neither of these considerations gives support to what is here seen to be a frequent practice, that of not affording opportunities for variation in programs before the opening of the ninth grade.

The constant subjects. In order to objectify the discussion, a list of constants suitable for a three-year junior-high-school program is first presented:

SEVENTH GRADE

	PERIODS PER WEEK
English	5
Social studies	5
Physical education	3
Music and art	2
Mathematics	5
Industrial or household arts	5
	<u>25</u>

EIGHTH GRADE

	PERIODS PER WEEK
English	5
Social studies	5
Physical education	2
General science	3
Mathematics	5
	<u>20</u>

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NINTH GRADE

	PERIODS PER WEEK
English	5
Social studies	5
Physical education	3
Music or art	2
	<hr/> 15

In the program of which these subjects make up the requirements, a school week of at least thirty periods of fifty or sixty minutes each, exclusive of assembly, is assumed. This leaves five, ten, and fifteen periods for variables for the seventh, eighth, and ninth grades respectively.

It will be noted that the number of class periods per week is assumed to be uniform for all three grades. There is no reason, unless it is respect for tradition, for arranging for a special length of period or number of periods for ninth grade different from that of the seventh and eighth grades. On the contrary, the educational advantages and the arguments of administrative convenience lend support to uniformity along this line throughout the junior unit.

The periods per week assigned to each of the several constants, and sometimes their place in any year, are not presumed to be final as much as suggestive. The basis for absolutes in the assignment of time to subjects and subject groups is still not at hand. Examples of defensible deviations from such a suggested arrangement of constants are easily imagined. For instance, there is the community which is just effecting reorganization and therefore does not see its way clear in the first year or two after its establishment to reduce the time devoted to English to five periods, or to make an offering large enough to afford election or variability in the seventh grade. Here the amount of time devoted to English might be increased to seven periods, and work in general science be introduced as a

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constant in the amount of three periods, thereby raising the total number of periods in the constants to thirty, the full quota of class periods per week. In such a situation it might be found desirable also to reduce somewhat the proportion of variables in the eighth grade. Because of difficulties of guidance, authorities in charge of large junior high schools may feel that this task is so large that no opportunity for election should be given during the first half-year or year. Again, it may appear desirable to add to or subtract from the number of periods suggested for certain other subjects or subject groups, for instance, to allow four periods instead of five for the social studies or mathematics, or three instead of two to the arts. At times authorities in charge may wish to include as part of these periods what are known as "activities," especially after they have been legitimated as elements in the educative process. But none of these deviations should be so extended as to prevent the disestablishment of the conventional program.

What the author has in mind for each of the subjects listed is roughly sketched in portions of Chapters VI and VII, where the reader must seek much of the justification for the inclusion or exclusion of any subject or subject group among the constants.

The criteria for selecting constant subjects. 1. *The aims of secondary education.* As we should expect to achieve our aims in education — which are the focal points of our educational philosophy — largely through an effectively presented curriculum, we must find in these aims the guidance necessary for deciding upon the kinds of work which are to be required of all pupils of given grades. This has been done in fixing upon the array of constants listed above. Because we desire to achieve a high degree of *physical efficiency* in all pupils, there should be a requirement in

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physical education; in general science, which to some extent touches upon hygiene; and in the social studies, which concern themselves in part with the problems of community health. Because of our desire to integrate our society and realize the *civic-social* aim in all education, a three-year sequence in the social studies has been introduced. The opportunities for universal training of this sort are somewhat enhanced by some of the contacts in English and in the industrial and home arts. Some phases of recreational life are of such a character that they should be the common heritage of all cultivated people. These are represented in the reading interests recognized in the requirements in English and the social studies, in physical education, in music and the graphic and other arts, as well as at other points in the list of required subjects. As recreational interests are also by nature in part dependent upon the individual, much of the training in these fields is left for the variables and for the voluntary extra-curricular activities. The *vocational* aim applies so much in special to the needs of the individual that almost no constants are listed for its attainment. Its only recognition is the requirement of a year of home arts for girls and of industrial arts for boys, a course in vocational civics in the eighth grade as part of the work in the social studies, and the incidental vocational values in other constant subjects. Even these subjects — most of them at least — should usually be regarded as exploratory or as serving other purposes than the strictly vocational.

2. *Training in fundamental processes as a criterion.* The necessity for continuing the training in the fundamental processes is also conceded in the list of constants. Development of ability in reading will be given some special attention in English and through application in other subjects. Training in written and oral expression is similarly sup-

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plied. Computational needs are met in the requirement of mathematics extending through two years. This will include work in arithmetic and contact with such parts of algebra and geometry as are useful to all. The exclusion of handwriting as a special subject is explained later under the description of subjects of study.

3. *The peculiar functions as criteria.* The achievement of the peculiar functions of the junior high school through the constants may be inferred from what has been said concerning the types of programs of study. It should be mentioned, however, that even in the list of constants there is some opportunity for exploration and guidance. This is true not only of the special subjects like music, art, the industrial arts, home arts, and vocational civics (to be suggested later as one of the constant social studies) but also in the "academic" subjects, English, mathematics, and the social studies.

The variable subjects. The wide range of curricular materials which may be drawn upon for use in the variables of a program is suggested by the following list assembled from the courses and school activities finding mention in a large number of published programs of studies and in other literature descriptive of the practices in a number of junior high schools. In addition to the subjects named one sometimes finds among the variables others usually or more often listed under the constants, such as community civics or arithmetic, or general science in Grades VII and VIII. On the other hand, some of the subjects in the list on pages 183 and 184 are often found among the constants, and properly so. In practice there is no clear-cut distinction between what is constant and what is variable; in fact, there is less distinction than there should be, especially in view of the rather obvious criteria already cited for determining constants and variables.

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CURRICULAR MATERIALS AVAILABLE AS VARIABLES IN GRADES VII, VIII, AND IX

Academic

General language, VII, VIII
Literature, VIII, IX
Public speaking, VIII, IX
French, VII, VIII, IX
German, VII, VIII, IX
Spanish, VII, VIII, IX
Latin, VII, VIII, IX
Ancient history, IX
General mathematics, VII,
VIII, IX
Algebra, VIII, IX
Plane geometry, IX
General science, IX
Physiology, VII, VIII, IX
Biology, IX
Physiography, IX
Physical science, VIII, IX

Industrial arts

General shop, VII, VIII, IX
Bench woodwork, VII, VIII,
IX
Cabinetmaking, VII, VIII, IX
Forging, VII, VIII, IX
Machine-shop work, VII, VIII,
IX
Gas engine and automotive,
VII, VIII, IX
Sheet metal, VII, VIII, IX
Brick and cement construction,
VII, VIII, IX
Electrical work, VII, VIII, IX
Painting and wood-finishing,
VII, VIII, IX
Printing, VII, VIII, IX
Bookbinding, VII, VIII, IX
Mechanical drawing, VII,
VIII, IX
Applied design, VII, VIII, IX
Pattern-making, VIII, IX

Shop mathematics, VII, VIII,
IX
Crafts, VII, VIII, IX
Household repair, VII, VIII,
IX

Domestic arts

Sewing, VII, VIII, IX
Millinery, VII, VIII, IX
Costume design, VII, VIII, IX
Textiles, VII, VIII, IX
House decoration, VII, VIII,
IX
Foods or cooking, VII, VIII,
IX
Cafeteria, VII, VIII, IX
Marketing, VII, VIII, IX
Meal-serving, VII, VIII, IX
Dietetics, VII, VIII, IX
Home nursing or child care,
VII, VIII, IX
Laundry, VII, VIII, IX
Home management, VII, VIII,
IX
Household mathematics, VII,
VIII, IX

Agriculture

General agriculture, VII, VIII
Farm crops, IX
Gardening, VII, VIII, IX
Home projects, VII, VIII, IX
(For example, poultry, dairy,
hogs, potatoes, corn, home
garden, etc.)

Commercial work

Junior business training, VII,
VIII, IX
Penmanship, VII, VIII, IX
Bookkeeping, VII, VIII, IX

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Business arithmetic, VIII, IX	Design, VII, VIII, IX
Typewriting, VII, VIII, IX	Lettering, VII, VIII, IX
Shorthand, VIII, IX	Picture study, VII, VIII, IX
Office practice, IX	Plastic art, VII, VIII, IX
Commercial geography, IX	Extra-curricular activities, VII, VIII, IX
Commercial history, IX	School journal
Clerical work for school, VII, VIII, IX	Athletic contests
Music	Dramatic club
Theoretical music, VIII, IX	Declamation club
Technical or instrumental music, VII, VIII, IX	Debating society
Music appreciation, VII, VIII, IX	Choral club
Chorus, VII, VIII, IX	Assemblies
Glee club, VII, VIII, IX	Social-service clubs
Orchestra, VII, VIII, IX	Student management
Band, VII, VIII, IX	Management of student affairs
Graphic and related arts	Boy Scouts
Free-hand drawing, VII, VIII, IX	Camp Fire Girls
	Many other activities

In the list just given the numbers following each title represent the grade or grades for which the course, activity, or group of activities has been regarded as appropriate by those administering the junior high schools in whose programs they were found.

Some items in the list are names of bodies of materials which may fittingly be organized into distinct courses extending through one or more semesters or years. Examples of these are the languages, general science, and many appearing under the nonacademic classifications. Others, such as wood-finishing, marketing, dietetics, meal-serving, and picture study, are usually not advantageously taught as separate units in the junior high school, but are preferably presented in combination with others. Still others will lend themselves to presentation by either of these two plans. Which procedure is to be followed in the last case

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must depend upon the amount of time that should be given to the activity to achieve the purpose in contemplation. Thus, if the purpose is exploration only, the time may be briefer than if the purpose is special vocational preparation. Combination with other activities to make a course will sometimes satisfy the former requirement, whereas presentation as a separate course will usually be necessary to satisfy the latter. Whether it is exploration or special vocational education which is to be provided must in turn hinge upon the local situation, as was indicated in Chapter II. Sometimes both will be desirable.

There has been added to the list a group of extra-curricular activities which have been found to be fruitful in educational returns. Their peculiar values are to receive special attention in Chapter XII, but the activities are named here because of a recent tendency to make them a part of every pupil's weekly program.

No claim is made that all the activities listed are suited to the grades indicated. Only experimentation can settle this question. As all of them have been listed as being carried on in junior-high-school grades, there is ground for confidence that very few will, by the trial of years and with the application of proper pedagogical skill, be found to be unadaptable. Perhaps as much question will be raised about listing Latin and algebra for upper-grade variables and plane geometry for a ninth-grade variable as by any item to which place has been assigned, but if discretion is used in admitting students of these grades to these courses, they will not be found to be beyond the mental capacities of the grades for which they are listed.

It is too much to hope that many junior high schools will soon offer as wide a range of variables as is represented in this list. The *desirability* of doing so is certainly not so much open to question as is the *feasibility*. With the im-

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portance of the purposes to be realized through them, to be presently reviewed, the list should be as large as possible. If the offering of variables must be restricted, it will perhaps be best first to omit those having the least immediacy to community needs in exploration and preliminary vocational education. It will be necessary to keep in mind at the same time, of course, the desirability of conserving the interests of the child.

The impression of the hopelessness of providing such a wide range of variables is somewhat mitigated when the activities are listed as follows :

SEVENTH GRADE

General language	Commercial work
Modern foreign language	Agriculture
Industrial arts	Music
Home economics	Graphic and related arts

EIGHTH GRADE

General language	Home economics
Additional literature	Commercial work
Modern foreign language	Agriculture
Latin	Music
Algebra or general mathematics	Graphic and related arts
Industrial arts	

NINTH GRADE

Additional literature	General science
Modern foreign language	Industrial arts
Latin	Home economics
Ancient history	Commercial work
General mathematics	Agriculture
Algebra	Music
Plane geometry	Graphic and related arts

Here the activities and subjects are grouped for the most part by the large divisions under which they classify and are placed in the list for the grades for which they have

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been deemed appropriate. The arrangement shows also a number of variables increasing from the seventh grade to the ninth, which comports with the decreasing proportion of constants listed earlier in the chapter. This device is misleading in the opposite direction from that of the previous catalogue of activities, and is not in the form in which the variables should be listed in a program. For such use most of the titles should be made more specific and the numbers of periods should be indicated. At the same time it suggests better than does the full list the practicability of a generous provision of variables.

The bearing of the variables on aims and functions. The rôle of these variable subjects in the achievement of the recreational and vocational aims in education has already been stated, although somewhat briefly: since realization of the former aim must be in considerable measure through differentiation rather than through efforts at integration, and of the latter almost entirely so, it is in the variables that this differentiation is to be effected. It should not be understood from this that the variables will be devoid of meaning for the two remaining aims of secondary education. There is hardly an activity listed that may not incidentally or even very directly assist in the attainment of the physical and the civic-social aims. There must, for example, be contact between the courses in literature or general science and the civic-social aim, or between the courses in the domestic arts and the health and civic-social aims. But the bearing is chiefly upon the aims in which differentiation is permissible or desirable.

Essentially the same statement may be made for the fulfillment of the proximate aim of training in the fundamental processes. As has been stated, this aim, being identical for all, must be achieved through constant more than through variable subjects. Nevertheless, a moment's

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consideration will make manifest the possibility of giving some such training in the variables, especially through application.

The influence of a generous list of variable subjects on the performance of the several peculiar functions of the junior high school is easily seen. Without doubt they will contain for many children a justification for remaining in school and for many parents for continuing their children in attendance. They will be of material assistance in economizing time, certainly in the sense of enrichment. This will be true for the pupil who plans to prepare for a higher institution and may elect a modern foreign language or algebra in the eighth grade as well as for the one who knows he must leave school in a year or two and on this account elects subjects related to vocational preparation. The advantages of such a list in recognizing individual differences, exploring for guidance, and providing the beginnings of vocational education are too obvious to require illustration. We may anticipate also that accomplishing the remaining peculiar functions, except perhaps providing conditions for better teaching, will be notably encouraged. But to perform adequately all these functions, the offering of variables must not be niggardly.

* The "core curriculum" and elective subjects proposed by Glass. An interesting comparison is afforded between the recommendations of constants above and the "core curriculum" proposed by Glass.¹ The subject groups, although designated by names slightly different, are seen (Table XX) to be rather similar. Glass has also definitely placed "social activities" and "guidance" within the week of thirty periods. The allotments of periods to the subject

¹ James M. Glass, Curriculum Practices in the Junior High School and Grades V and VI, Supplementary Educational Monograph No. 25, p. 21. The University of Chicago Press, November, 1924.

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TABLE XX. THE SIX CONSTANTS, ARTICULATED PROGRAMS OF SOCIAL ACTIVITIES AND GUIDANCE, AND ELECTIVES DISTRIBUTED IN A WEEKLY SCHEDULE OF THIRTY ONE-CLOCK-HOUR PERIODS¹

PRIOR TO INITIAL ELECTIVES		PERIODS	FOLLOWING INITIAL ELECTIVES	
Health	3	1	Health	3
		2		
		3		
English	5	4	English	4
		5		
		6		
		7		
		8		
General mathematics	5	9	General mathematics	4
		10		
		11		
		12		
		13		
Social studies	4	14	Social studies	4
		15		
		16		
		17		
		18		
Natural science and geography	4	19	Science	3
		20		
		21		
		22		
		23		
Fine and practical arts	5	24	Fine and practical arts	4
		25		
		26		
		27		
		28		
Social activities	3	29	Social activities	3
		30		
Guidance	1		Elective	5

¹ James M. Glass, Curriculum Practices in the Junior High School and Grades V and VI, Supplementary Educational Monograph No. 25, p. 21. The University of Chicago Press, November, 1924.

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2 groups also are seen to differ somewhat. A chief difference is in the fact that Glass's recommendations imply a period "prior to initial electives," whereas in the suggestions above some election is recommended as early as the opening of the first junior-high-school year. However, most of these differences are within the scope of deviations approved in connection with the recommendations of constants made.

Another difference — partial only — between the program of constants above and the "core curriculum" proposed by Glass is the fact that he provides for carrying all the subjects through the complete three-year period. It does not appear to the present writer that this is a *sine qua non* of the junior high school. It is quite possible that all *common* needs in certain subject fields, for example, in practical arts, fine arts, or science, may be met in less than three years. There is little basis for the misgiving that following such a practice in a few fields vitiates the "core" idea.

Glass's suggestions on electives are to be found in Table XXI. Although they are proposed as courses in differentiated curricula, they are such as to commend themselves as variables in a constants-with-variables program or as electives in certain combination types of programs of studies referred to earlier in this chapter, for example, the combination of the multiple-curriculum and the constants-with-variables types, or the combination of the single-curriculum, constants-with-variables, and multiple-curriculum types. They contain also suggestions for a special vocational curriculum conforming to the requirements necessary for receiving national and state aid under the Smith-Hughes Act similar to that reported above as being in operation in the intermediate schools of Detroit.

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TABLE XXI. ELECTIVES FOR JUNIOR-HIGH-SCHOOL PROGRAMS
OF STUDIES¹

CURRICULUM	ELECTIVE COURSES	
	Eighth Year or Second Semester of Eighth Grade	Ninth Year
Academic	Foreign language	Foreign language
Fine arts	Art or music	Art or music
Technical (engineering courses)	Shop work or home economics	Shop work or home economics
Commercial	Junior business training	Junior business training
		Typewriting
		Bookkeeping
Vocational (trade courses)	Vocational, industrial, or household arts — half time	Vocational, industrial, or household arts — half time

FACTORS RETARDING CURRICULUM REORGANIZATION

The influence of conservatism. It is no difficult task for the student of the junior-high-school movement to muster evidences of failure to effect real reform in curriculum matters in connection with efforts to introduce the new unit in a school system. In fact, the impression is gained by one who scrutinizes with care the offerings of any large number of junior high schools that in many communities these schools are ushered in with little or no readjustment in this significant respect. This fact has already been disclosed in portions of the present chapter, for example, in adherence to the single-curriculum program sometimes even for the second year of junior high schools, not only in two-year units, but often even in the three-year units. It was shown again in the data cited from investigations by Douglass and Rodgers, which discovered no wide departure from tradition in many schools with respect to the

¹James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, p. 22. The University of Chicago Press, November, 1924.

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representation of subjects in seventh, eighth, and ninth grades. The frequent absence of change *within* subjects or groups of subjects will be made manifest in the two chapters next following.

It may be too obvious to state that the factors of this situation are perhaps most easily generalized under a composite category of inertia and conservatism. We are willing enough to effect or to appear to effect reform if thoroughgoing readjustment is not demanded of us. We may go into a new building with teachers unprepared in spirit or training for the new task, teachers carrying with them old syllabi, old textbooks, and old methods. Moreover, should there be a disposition to thoroughgoing change on the part of those immediately in charge, there is the patron who, still conceiving the school along the lines of its make-up when he was a youth, resists a shift to what he does not understand. Little genuine reform is to be brought about before at least partial sympathy or tolerance of change is won for the new movement from those whose children are in attendance. But resistance to change is not restricted to those immediately in charge or to patrons. There is a good deal of justification for the belief that one of the greatest hindrances to curriculum reorganization — still classifiable as conservatism — is the unreadiness of those in charge of schools on levels above the junior high school to accept the modifications attempted. This is illustrated for the senior high school in a conclusion drawn by Ferguson from a study of the problems of articulating junior and senior schools, this problem having much in common with that of significant curriculum reform :¹

One fact clearly brought out by the questionnaires promises to delay the day of satisfactory articulation of junior and senior

¹ Arthur W. Ferguson, "Articulating the Junior and Senior High Schools," *School Review* (September, 1923), Vol. XXXI, p. 456.

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high schools in many places. On the one hand, there is an enthusiastic group of junior-high-school principals so convinced of the destiny of the new institution that they cannot see the possibility of pitfalls ahead. These men are prone to make extravagant claims for the junior high school on flimsy evidence. On the other hand, there is a conservative group of senior-high-school principals who, even if they accept the junior high school, do so in the spirit of a "woman convinced against her will." One of the distinguishing characteristics of these men is that they *cannot conceive of the junior high school as having any reorganizing influence on the senior high school.*¹ When these two types appear in the same school system, the junior high school begins operations under a serious handicap.

It may be added that senior-high-school principals are not the only representatives of the upper-secondary-school unit instrumental in this obstruction. Teachers in senior high schools, more often than principals, are unappreciative of the import of junior-high-school reorganization and therefore intolerant of curriculum modification. This lack of appreciation of the junior high school by senior-high-school teachers is suggested in materials reported elsewhere by the writer.² It is there reported that, of almost four hundred teachers, only twenty-nine selected junior-high-school reorganization as a topic desirable for high-school-teachers' meetings. Only six of a total of twenty-five topics for meetings received a smaller number of ballots. Teachers for whom the downward extension of secondary education is as remote in interest as this would be unlikely to be sympathetic with the curriculum changes implicit in the movement.

College-entrance requirements and curriculum reform in the junior high school. It is a common conviction among

¹ The italics are those of the present writer, not of the author.

² Leonard V. Koos, *The American Secondary School*, p. 671. Ginn and Company, 1927.

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those interested in bringing the junior high school to a state of efficient service that the most obstructive influences to curriculum reform in the grades included is to be found in the college-entrance requirements which are formulated in terms of the four-year high school. This is a conservative influence higher up in the system than the senior high school as just discussed. An impression of its magnitude as an obstacle, as it looms in the minds of leaders in the movement, may be seen in the statement by Glass, that "until the domination of the colleges over the ninth year is removed the integration of the junior-high-school program of studies will continue under a heavy if not fatal handicap."¹

(The necessity of having the college maintain the laissez-faire policy toward the junior-high-school curriculum has been pointed out at two earlier points in this book, first, in Chapter II, while discussing vocational education as it touches the new institution, and again near the close of Chapter III, in considering the similarities and differences of purposes of the junior and senior periods of secondary education. At the first of these points it was stated, as a corollary of the conclusion that junior high schools should not typically provide preparation for specific occupations, that they should not be called upon to encourage the kind of specialization represented by preparation for college. In Chapter III the inference was akin to this: the differentiation of purpose between the junior-high-school and the senior-high-school period having been found to be in the lower group of years one of exploration and guidance, and in the upper group more appropriately one of specialization, preparation for college, in so far as it

¹ James M. Glass, "Recent Development in the Junior-High-School Field," Ninth Yearbook of the National Association of Secondary School Principals (1925), p. 179.

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must be given, is to be accomplished within the upper triennium of the six-year secondary-school period.

Additional support for the emancipation of the junior high school from the bondage of college entrance arises from a number of sources. Important in this connection is the likelihood that pupils' records during their last three years in the secondary school will serve as a better basis for predicting success in college than will the four-year period; this on the ground that the more remote in time the basis of prediction, the less significant the relationship. Another consideration closely related is the desirability of delaying the acquirement of skills and information actually needed for successful pursuit of college subjects to as near as may be the time of their use in these subjects, and, therefore, as near as possible to the time of entrance into college. This is not so much theory as good common sense. Finally, it may be said in support of the proposal to formulate entrance requirements as applicable to the senior-high-school period only, that this is, after all, adding only a single year to the eight-year period over which the college has been exercising no direct control.

When one comes to face the practical question of just what procedure should be followed in admitting to college on the basis of senior-high-school work only, we have the practice, which has already appeared, of considering only the twelve units that are normally earned during a three-year period. The college-entrance prescription of two or more units of mathematics and two or more units of foreign language — a common type of practice — presents a problem requiring special attention. According to the principle proposed of certificating on senior-high-school work only, it should be possible for all such required work, including first-year courses, to be completed within the three-year senior-high-school period.) *No number of units in any single*

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subject should be so large as to make it imperative for the sequence to have been begun before the opening year of the senior unit. This means that no minimum prescription in any field, such as mathematics or Latin, should be stated in excess of three units inclusive of first courses. On the other hand, this should not be taken to signify that the junior high school should provide no work in these fields. Such subjects will and should be included in the offering. It is vital that those in control of the junior high schools be allowed freedom to give each pupil the work suited to his needs, whether this is, for example, additional practical arts for those discontinuing their education with the close of the junior period, or foreign languages for those who will go on to higher levels of training and who seem destined for literary pursuits. If the pupil takes first courses in mathematics or foreign language in junior-high-school years and continues them in the senior period, it should suffice for certification to college that the senior high school report on the sequential courses in these fields taken in the senior period only. It should be assumed that the senior high school will insist that any prerequisites to such courses as the second year of Latin, the second year of general mathematics, or plane geometry shall have been met.

Admission to college on the basis of the pupil's record in senior high school only is rapidly gaining in favor. Although at this writing no large number of higher institutions are following it in practice, there are significant examples of its being done. Several standardizing agencies are considering it or urging it on their members. It cannot be many years before the burden of college entrance will be generally lifted from the third grade of the junior high school. This will give the new unit greater freedom to work out a curriculum better adapted to the performance of its momentous purposes.

THE PROGRAM OF STUDIES

RELATION OF THE PROGRAM OF STUDIES TO OTHER FEATURES

In Chapter III it was pointed out that the peculiar functions of the junior high school are not completely separate and distinct from each other, but are, instead, much intervolved. The features, also, have intimate relationships with each other. Thus, the feature to whose discussion this chapter has been devoted may be seen to be dependent upon the provision of other features to be discussed in succeeding chapters. For example, the hope of provision of such a program of studies as has been suggested must wait upon the possible specialization of teaching work that accompanies departmentalization or semi-departmentalization; a program partially variable requires promotion by subject; it may not be presented satisfactorily by traditional methods only nor by teachers with traditional attitudes and inadequate training who are in turn supervised by principals without a conception of the possibilities of this new institution; to administer the variables so that each child's curriculum will include those subjects which will be of greatest service to him will require the establishment of the machinery of an effective advisory system; many of the extra-curricular activities listed among the variables will be out of question without the social organization of the students, while many subjects, both constants and variables, may not be presented without improved housing and enlarged equipment. This dependence of the provision of a satisfactory program of studies upon many other features is evidence that a functioning reorganization may not be effected without the introduction of many features. Additional phases of these relationships and interdependencies are referred to at several other points in this book.

THE JUNIOR HIGH SCHOOL

QUESTIONS AND PROBLEMS

1. Account for the practical disappearance of the pure multiple-curriculum type of program of studies.
2. Discuss the types of programs of studies from the standpoint of their adaptability to the needs of guidance.
3. Secure the programs of studies of some junior high schools with which you are acquainted, and classify and criticize them from the standpoint of the materials of this chapter.
4. Discuss the acceptability of the lists of constants in the three programs of studies of the constants-with-variables type quoted in the treatment of this type in the chapter.
5. Locate what appear to be the constants in the program of studies for the intermediate schools of Detroit, and discuss their acceptability.
6. Apply the criterion of the junior high school as a "transitional" unit to the problem of the appropriate type of program of studies, and to the question of the extent and nature of the constants and variables.
7. Suggest means of bringing about a better articulation of junior-high-school and senior-high-school courses and programs of studies.

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A TREATMENT BY SUBJECT GROUPS

A TREATMENT BY SUBJECT GROUPS

The nature of the treatment of the subjects of study. There is essayed in this chapter and the one next following a brief characterization of each of the subject groups for which a place was made in the program of studies suggested in Chapter V. Each characterization attempts in a few strokes — sometimes, perhaps, too bold — to depict the type of content, its organization, and, less often, the mode of presentation which should obtain. It is admitted that descriptions of the sort attempted, on account of the limited lessons of educational science in this field to date, may lay little claim to finality. But in preparing these statements the author has been guided by important reports of committees, by knowledge gained through an examination of a large number of descriptions which are being followed in the presentation of junior-high-school subjects of study, by observation of much classroom work in many fields in a number of junior high schools, by the findings of such studies as have made application of scientific methods to solution of curriculum problems in these grades, and by the aim to present a characterization which would seem best adapted to achieving the general purposes of secondary education as a whole and the special purposes of the junior high school.

The grouping of the subjects considered. A word of explanation may be in order concerning the treatment of subjects in groups as is done here. The groups represented

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are English, the social studies, mathematics, science, foreign language, the industrial arts, home economics, commercial subjects, music, art, and physical training. This classification does not, on the one hand, follow the specialistic division represented in the offerings of the grades concerned in schools conventionally organized, for example, reading, literature, grammar, composition, spelling, geography, American history, civics, arithmetic, algebra, physiology and hygiene, and the like. These subject divisions come up for consideration within their respective groups, to be sure, but the trend of treatment is toward integration rather than separation of the content represented. The grouping itself implies that some extent of integration is desirable. It is quite within our expectations that curriculum reform, especially in junior-high-school grades, must shatter many of the barriers that have conventionally separated subject from subject. The treatments to follow disclose the modifications along this line that are already taking place and that promise shortly to manifest themselves. On the other hand, the time is hardly ripe for a complete abandonment of all lines of division between subject groups in the older sense, especially as it is difficult, if not impossible, for those in the practical school situation to follow all the way those who advocate procedures which call for such abandonment.

ENGLISH

The shifting organization and emphasis in English for junior-high-school grades. Many courses of study in English in junior high schools are disappointing in their too great conformity to the traditional in materials and methods. It is not uncommon for institutions bearing the name of junior high school to list in seventh and eighth

THE JUNIOR HIGH SCHOOL

grades all the different subjects falling under the general classification of English in the upper grades of the eighth-year elementary school, namely, reading (or literature), grammar (sometimes with composition), spelling, and penmanship, with the occasional addition of some other division. The amounts and proportions of time devoted to the several divisions are likewise similar to what is traditional.

However, schools effecting more thoroughgoing curriculum reorganization tend to reduce the number of different English subjects listed in the program, although, desirably, without omitting vital constituents of training in this field. Practice in the better schools appears to be to list but a single subject in the program, designating it as "English," but ordinarily administering it in two main phases, namely, "language" or "composition" (oral and written) and "reading" or "literature." Spelling and grammar are introduced as elements of the former phase.

The shift in the allotment of time to the divisions of the subject may to some extent be inferred from a consideration of the average numbers of minutes and percentages of the total time devoted to them in fourteen school systems "chosen in different parts of the country with a view to including especially those which had undertaken some special reconstruction of the upper grades of the elementary school," most of them through junior-high-school reorganization (see Table XXII). These averages cannot, of course, disclose the wide variation that exists from school to school. The emphasis on the four divisions listed by both measures named is in the following order: (1) literature and reading, (2) composition, (3) grammar, and (4) spelling. The order in the conventional school would interchange grammar and composition, and, in some unreorganized schools, would even place spelling ahead of composition.

THE SUBJECTS OF STUDY

TABLE XXII. AVERAGE NUMBER OF MINUTES PER WEEK AND PER CENT OF TIME ALLOTTED TO EACH DIVISION OF ENGLISH IN JUNIOR-HIGH-SCHOOL GRADES OF FOURTEEN SCHOOL SYSTEMS¹

DIVISION OF SUBJECT	AVERAGE NUMBER OF MINUTES			AVERAGE PER CENT OF TIME		
	Grade VII	Grade VIII	Grade IX	Grade VII	Grade VIII	Grade IX
Composition .	82.4	80.4	88.9	27.3	29.8	33.4
Grammar . .	83.1	63.3	49.0	23.5	17.1	17.1
Literature and reading . .	116.8	100.3	118.4	36.0	37.2	44.6
Spelling . . .	38.9	31.3	26.0	11.1	9.5	4.9

A further study helpful in disclosing recent shifts in English in the grades concerned is that by Lyman, reporting the results of an analysis of twenty-four language-composition textbooks for seventh and eighth grades published from 1920 to 1924.² These books were grouped as to their intention for use in junior high schools and elementary schools and analyzed as to the percentages of space given to various classes of materials. The average percentages devoted to the larger divisions are presented in Table XXIII. It is not to be expected that texts of this sort will contain much in the field of literature. For the three remaining divisions there are notable differences of emphasis, namely, less grammar, more composition, and more study helps in junior-high-school texts than in elementary-school texts. The averages reproduced cannot show the differences from book to book or on subdivisions of these larger classifications of content. Illustrative of significant differences in these subdivisions for eighth

¹ Adapted from Tables XXIII (p. 107) and XXIV (p. 115) in James M. Glass's "Curriculum Practices in the Junior High School and Grades V and VI."

² R. L. Lyman, "A Study of Twenty-four Recent Seventh- and Eighth-Grade Language Texts," *Elementary School Journal* (February, 1924), Vol. XXIV, pp. 440-452.

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TABLE XXIII. PERCENTAGES OF SPACE GIVEN TO VARIOUS CLASSES OF MATERIALS, IN SEVENTH-GRADE AND EIGHTH-GRADE LANGUAGE TEXTBOOKS ¹

CLASSIFICATION OF CONTENT	JUNIOR-HIGH-SCHOOL BOOKS		ELEMENTARY-SCHOOL BOOKS	
	Grade VII	Grade VIII	Grade VII	Grade VIII
I. Grammar	50.1	40.4	57.3	56.6
II. Composition . . .	21.4	42.8	24.8	31.3
III. Literature	11.7	8.8	9.2	8.2
IV. Study helps	16.8	8.0	8.7	3.9

grade are the following percentages for junior-high-school and elementary-school texts respectively: (1) under *grammar*, parts of speech, 7.1 and 19.9 per cent; punctuation and capitalization, 8.2 and 2.3 per cent; (2) under *composition*, lists of topics, 9.1 and 2.4 per cent; (3) under *study helps*, how to write or speak, 2.9 and 0.9 per cent; "other study helps," 3.9 and 1.6 per cent. Although some may be disappointed in the degree of transition shown, it is of moment that texts thus early reflect as much as they do the ideas of leaders in the field.

Another aspect of the shift in better reorganizations, not so far referred to, is the improved articulation from grade to grade. Tradition has called for a too sudden shift from grammar in eighth grade to composition in ninth grade and from "reading" as such in eighth grade to the analytic study of classics in ninth grade. Even before the advent of the junior high school efforts were being made in the direction of effecting an amalgamation of composition and grammar that was carried through at least Grades VII, VIII, and IX. Beginnings were also made toward a more gradual transition in the second main phase by providing for the study of literature in the upper ele-

¹ Adapted from Tables I and II in R. L. Lyman's "Study of Twenty-four Recent Seventh- and Eighth-Grade Language Texts."

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mentary grades, and by the assumption in the ninth grade of some responsibility for training in reading skills. The junior high school is accelerating this improvement, but can do much more than has so far been accomplished.

The aims of junior-high-school English as set up in one school system. The reconstruction of courses in junior-high-school English in many quarters has often been accompanied by the reformulation of aims of the subject. Among the most acceptable of the statements resulting are those proposed for junior high schools in Denver.¹ The aims of *composition* are as follows:

GENERAL AIMS

Oral

To develop such habits in the pupil that he will have confidence in his oral ability to present a subject within the range of his experience in an interesting, forceful manner, with conscious correctness of form

SPECIFIC AIMS

Oral

1. To bring the realization that the ability to utilize information and experience in conversation and contact with the public is a factor in developing personality
2. To secure clearness through the application of the principle of unity
3. To develop the power to organize material in a logical way
4. To develop the quality of interest in original work through the principles of sentence variation, the use of detail, and the selection of words
5. To help the pupil to utilize such means of appeal as pleasing voice, correct posture, clear enunciation, and accurate pronunciation

¹ English [in the] Junior High School, Grades Seven, Eight, and Nine, Course of Study Monograph No. 9, pp. 90-91. Public Schools of Denver, Colorado, 1925.

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GENERAL AIMS

Written

To secure freedom of expression in writing through habits of wise selection of material and knowledge of correctness of form

SPECIFIC AIMS

6. To establish sufficient technique of form to serve as criteria of correctness

Written

1. To transfer the knowledge acquired in the study of oral composition to the written form
2. To make the use of essential punctuation habitual
3. To establish conventional forms

The aims of the teaching of literature proposed for the junior-high-school grades of Denver are as follows:¹

GENERAL AIMS

The general aims in the teaching of literature in the present day look forward to the adult use of the factor of reading and may be summarized in this way: to utilize the ability to read in securing information which will assist the individual in living understandingly in the world as he finds it; and to develop permanent interests in reading which will function in a worthy use of leisure.

SPECIFIC AIMS

The specific aims apply to the immediate teaching of the junior-high-school pupil to the end that such application may function not only in his present but in his adult experiences. They may be expressed as follows:

1. To develop the mechanics of reading to the limit of individual ability.
2. To assist in developing habits of intelligent interpretation and application of material.

¹ English [in the] Junior High School, Grades Seven, Eight, and Nine, Course of Study Monograph No. 9, p. 19. Public Schools of Denver, Colorado, 1925.

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3. To give an acquaintance with, and an opportunity of enjoyment in, recognized masterpieces.

4. To instill and encourage the development of ideals.

5. To develop the habit of evaluating literature in terms of its reality, or trueness to life.

A list of "progressive tendencies" in secondary-school English. With the larger outlines of the new emphases before us it is appropriate to present a longer list of the modifications which secondary-school English, inclusive of junior-high-school work in this field, is undergoing. This is provided in Lyman's "classification of progressive tendencies in the teaching of English," here quoted in full.¹

1. Literature

- a. Intensive study giving way to extensive reading
- b. Wider variety of free individual choice of reading
- c. Literature easily within range of pupil's comprehension
- d. Literature regarded as a living reality
- e. Training for culture distinguished from training for efficiency

2. Reading

- a. Direct guidance in habits of silent assimilative reading
- b. Recognition of various types of reading situations
- c. Reduction in time of oral reading
- d. Content reading stressed in all subjects
- e. Diagnostic and remedial work with deficient readers

3. Composition

- a. Sharp separation of expression periods from drill periods
- b. Oral composition receiving marked attention
- c. Creation of vital and natural expressional situations
- d. Pressure of the social group through publicity and permanence
- e. Supervision of writing and speaking in all subjects

¹ R. L. Lyman, "A Study of Twenty-four Recent Seventh- and Eighth-Grade Language Texts," *Elementary School Journal* (February, 1924), Vol. XXIV, p. 442.

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4. Language

- a. Functional grammar only ; a small body of technique
- b. Subordination of language study to expression
- c. Minimal essentials arranged by grades
- d. Experimental determination of content of instruction
- e. Supervision of oral and written expression in all classes

5. Methods

- a. Instruction and activities adapted to individual needs
- b. Formal recitations giving way to supervised study and laboratory procedure
- c. Socialized procedure involving problem-solving and pupil initiative
- d. The use of objective measurements for abilities and products
- e. Better material equipment — bulletin boards, reading tables, filing cabinets, class libraries, etc.

In presenting this list the compiler points out that most of the items are represented in the most important document of recent years affecting the teaching of English in junior and senior high schools, "The Reorganization of Secondary-School English."¹ Although it was proposed for the full period of secondary education, it contains no item which is without meaning for the improvement of instruction in English in junior-high-school grades.

The shift from overemphasis on formal grammar. This list of progressive tendencies calls attention again to a shift of emphasis already disclosed in the first section of this treatment of English, the movement away from instruction in grammar toward direct training in expression itself. An accompanying phase of this shift is the movement from "formal" to "functional" grammar. A statement by Glass illustrates this trend of thought.²

¹ *United States Bureau of Education Bulletin No. 2*, 1917.

² James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, Supplementary Educational Monograph No. 25, p. 117. The University of Chicago Press, 1924.

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A readjustment of the former practice of concentrating grammar in the seventh and eighth years should be sought by shifting from formal and disciplinary grammar to functional grammar. When the latter aim in grammar teaching is once accepted, there must be adopted at the same time a plan to distribute grammar work among junior-high-school grades and upper elementary grades in order that grammar may actually be made continuously and progressively functional. With this development in grammar work will come a more equitable time distribution to literature and to oral and written composition.

Although the meaning of the term "functional grammar" may be implicit in what has already been said concerning it above, it is perhaps not out of place to make a more explicit statement concerning it. The word "functional" is applicable in at least two respects: (1) in the manner of selecting the grammatical content to be stressed and (2) in the manner of presenting that content.

1. It is increasingly held that the major if not the sole general use of a knowledge of English grammar is in the assistance it affords in grammatical usage in oral and written speech. If this is true, it calls for a study by our pupils of only those grammatical principles required for this purpose, that is, those which are at all frequently violated. Investigations¹ have been made to determine these, and one conclusion that may be drawn from them was referred to in Chapter II while dealing with the special purpose of economizing time, — that the amount of time devoted to grammar in seventh and eighth grades might well be cut down.

2. Functional grammar, with respect to the manner of presentation, calls for teaching methods that will bring

¹ The first of these was made by W. W. Charters and Edith Miller. Significant findings of this study and of a number of related investigations by others were reported by Charters in the Sixteenth Yearbook of the National Society for the Study of Education (1917), Part I, pp. 85-110.

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(1) the grammatical principles and (2) practice in speaking and writing into intimate association, so as to facilitate the carry-over from one to the other. Earlier methods have too generally assumed that the transfer is automatic. To this end it appears preferable, as Glass suggests, to distribute such grammatical content as is retained more evenly over the full junior-high-school period — or even longer. Perhaps it is needless to indicate that *the shift of emphasis thus recommended is far from calling for the elimination of all instruction in grammar.*

Literature and reading. In the first group of divisions in Lyman's list of progressive tendencies are implicit certain important recommendations, which, if heeded, would effect a much needed reform in the teaching of *literature*. Surely the teaching of literature in these school grades would profit from some degree of shift to extensive reading rather than intensive study of literature, to wider variety of choice by individual pupils in the materials read, to the selection of literature more nearly within the comprehension of many pupils than is that typically found in course outlines for these grades, etc.

The second group of tendencies having to do directly with *reading* are similarly vital to the improvement of instruction in this field. By not giving attention to them we are defeating for some the attainment of values inherent in literature, since efficient reading ability is antecedent to deriving these values. The same statement, in fact, may be made for all subjects of study of which reading is a constituent, and there are few if any that should involve no reading. The writer whose organization of progressive tendencies in English was quoted on pages 207-208 has himself elsewhere emphasized this relationship in saying:¹

¹ R. L. Lyman, "The Teaching of Assimilative Reading in the Junior High School," *School Review* (October, 1920), Vol. XXVIII, pp. 601-603.

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Whether or not it be granted that reading and study are one, there can be no doubt that some school agency on about the level of the upper grades ought definitely to assume as one of its major duties direct guidance into the habits of reading that underlie effective study. . . . After the more mechanical skills are attained in the primary and middle grades, the perusal of texts and of reference books becomes the chief learning medium of our pupils. . . .

To be noted here is the point that the present discussion concerns *direct* instruction, specifically given, with the clear understanding on the part of pupils as to what they are doing, and why they are doing it. . . . The suggestion is here made that with the junior high school the time has come for a conscious understanding through analysis of actual processes, supplementing the informal guidance of lower grades. Pupils are to be made aware. Boys and girls of junior-high-school age may be definitely directed into a realization of their good and bad habits of reading, studying, and thinking. Standards of excellence may be held up to them for analysis and understanding, and specific drills for skill in the essentials of good *study-reading* would appear to be as much in place as drills for number skills, oral-reading skills, or spelling skills.

Lyman presents also the criteria of a skillful reader and outlines a series of objectives in silent reading for the seventh grade, one for each of the nine months of the school year. Chief among these objectives are the following: speeding up silent reading, grasping the central thought in reading, getting a bird's-eye view of the reading, selection in one's reading, judging values in one's reading, and making use of one's reading.¹

Another writer, Edith Shepherd, teacher in The University of Chicago Junior High School, reports on silent-reading lessons conducted in the seventh grade of that institution.² This training was a part of the study of

¹ Ibid. pp. 605-606.

² Edith Shepherd, "Some Silent-Reading Lessons in Junior-High-School English," *School Review* (March, 1921), Vol. XXIX, pp. 206-215.

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English and extended through two lessons a week for two periods, one of nine weeks in the winter months and the other of six weeks in the spring months. The materials were classified as (1) textbook, that is, parts of a text in community civics; (2) related supplementary reading, for example, parts of the *Community Leaflets* published by the United States Bureau of Education; and (3) related recreational reading, such as fiction. The experiment was begun by arousing the pupils' curiosity in silent reading and testing for rates of speed and for comprehension. After this came the presentation of and practice in the principles of reading to the best advantage, the instruction in general following the lines suggested by Lyman in the report already drawn upon above. During the progress of the experiment pupils were grouped according to reading ability and the differentiation of instruction necessary; types of poor readers were located, remedial training was given; additional supplementary activities were provided for capable groups; much practice was given on each principle, including lessons in finding central ideas; and the principles were reënforced by correlating the work with the principles of composition. Miss Shepherd reported that the reading power of weaker pupils was markedly improved, and that at the end of the year they attacked reading assignments "with a spirit of concentration quite lacking early in the year, and had a considerable ability in selecting essential points in a passage."

The time allotment to required English. It may be that some readers, particularly specialists in English, may take exception to the amount of time suggested in the foregoing chapter to be allotted to the work in English in junior-high-school grades. The constants proposed by the present writer include five sixty-minute periods per week in each

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of the three years. Glass, also, was quoted as proposing in his core curriculum five periods for work in English "prior to initial electives" and four "following initial electives." In discussing this allotment, it was conceded that in junior high schools newly at work in effecting reorganization, or serving pupils coming from non-English-speaking homes, it might be found desirable to extend this allotment somewhat.

It is difficult to see why, in the typical and settled junior-high-school situation, all essential work in English cannot be accomplished within such a five-period allotment of time. This is, to be sure, much less time than is given to all phases of English as taught in seventh and eighth grades of the conventional organization. But the reconstructed junior-high-school program will effect such modifications as will permit of reduction of time. In the first place, there will be the saving in the decrease of the amount of time ordinarily devoted to formal grammar and to the often worse than bootless instruction in oral reading. Secondly, there is much opportunity for training in English in other subjects, for example, in silent reading *in application* in other reading courses like history, community civics, and science, or in written and oral speech in these and other courses. Moreover, it is worth remembering that work in English is a large element of the training in grades below the seventh, and that it usually continues throughout all the secondary-school years. There seems to be no vital reason for a much larger allotment of time in eighth grade than in ninth grade, and, similarly, in seventh grade than in eighth grade.

Variable, or elective, courses in English. The field of English in the junior high school is one essentially of subject matter appropriate for the constant, or "core," constituent of the program. There are, nevertheless, portions

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that adapt themselves to administration as variable, or elective, courses. It is conceivable that a course in additional literature might be offered, especially for those among the pupils who are omnivorous readers and who might profit by some extent of guidance in the selection and utilization of the materials they peruse. It is also conceivable that the interests of these pupils could be recognized, as they sometimes are, in reading clubs of one sort or another, supervised by a teacher who is herself an omnivorous reader as well as a skillful and stimulating guide. Here we have an instance of the activities that may properly fall either into the curriculum or into the extra-curriculum. Mention of the allied activities calls to mind others, like work on the school paper, that are also sometimes appropriately curricularized by being placed in the variable portions of pupils' programs. Among possible variables it is proper to refer to simple courses in public speaking, carrying training in oral work beyond that provided for all pupils in the required English. In the variable portions also may be placed some of the content now often designated as "general language," although other portions may be considered appropriate elements of the constant courses in English. The place of handwriting, often thought of as a phase of training in English, will be considered in the next chapter while dealing with commercial subjects.

THE SOCIAL STUDIES

Current offering in this field. Data concerning the status of the social studies in junior high schools have already been presented in the foregoing chapter in the tables (XVII, XVIII, XIX) quoted from Rodgers. It is there seen that in the seventh grade of two-year junior high

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the ascendant ; and the course in "vocations" appearing in no negligible proportion of schools.

Importance in the junior high school. Whatever may have been the uncertainty as to the purpose of the social studies in education in former years, there is no doubt today that their major service is training for "good citizenship" broadly conceived. The Committee on Social Studies of the Commission on the Reorganization of Secondary Education took this point of view in its report : ¹

... from the nature of their content, the social studies afford peculiar opportunities for the training of the individual as a member of society. Whatever their value from the point of view of personal culture, unless they contribute directly to the cultivation of social efficiency on the part of the pupil, they fail in their most important function. They should accomplish this end through the development of an appreciation of the nature and laws of social life, a sense of the responsibility of the individual as a member of social groups, and the intelligence and the will to participate effectively in the promotion of the social well-being.

This statement of major purpose may be accepted for schools on any level, elementary, secondary, or higher. But writers on the rôle of the social studies in the junior high school frequently make mention of a peculiar appropriateness of curriculum emphasis in this field arising from changes in the nature and interests of children in this period. Brief excerpts from two such writers will be quoted in illustration. The first is by Stone, written in conclusion of an article dealing with the social sciences in the junior high school : ²

The main objectives of the social-science group are closely akin to and almost inclusive of the principal objectives of the

¹ *United States Bureau of Education Bulletin No. 28* (1916), p. 9.

² Seymour I. Stone, "The Social Sciences in the Junior High School," *School Review* (December, 1922), Vol. XXX, p. 769.

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junior high school and the basic reasons for the existence of this division of the school system as a distinctive institution. In the storm and stress of early adolescence the social feelings are heightened while the child's social horizon is correspondingly widened. . . . His social instincts are tense. Therefore, the purposes and spirit of the social-science activities should permeate the entire junior-high-school plant. The junior high school is, then, in a very special sense, the school for the development of citizenship and character, and on the work of the social-science teachers rests a very real and far-reaching responsibility.

The other quotation is from Gosling, writing in a similar vein:¹

. . . the social studies in the junior high school afford an opportunity for developing the natural tendencies of children of the early adolescent age to identify themselves with group interests of ever widening proportions. These tendencies, instead of being repressed, should be developed by means of satisfying information accompanied by purposeful activity of a kind that harmonizes with the ability of the children.

These points of view are in general harmony with that taken in the earlier portions of Chapter III in calling attention to the social impulses of adolescence in dealing with the function of recognizing the nature of children in this stage of development.

Proposed offerings in the social studies. In harmony with the belief in the dominant aim of the social studies and in the necessity of achieving it, important committees have been at work mapping out programs of courses in the field for elementary and secondary schools. It is pertinent here to refer to the arrangements of courses proposed by these committees for junior-high-school years. While examining these, it is well for us to bear in mind that no

¹ Thomas W. Gosling, "The Social Studies in the Junior High School," *School and Society* (December 2, 1922), Vol. XVI, p. 627.

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such consideration of junior-high-school subjects may be regarded as adequate which does not take into account what is given in the same or related subjects in grades above and below. One of the first of several such programs proposed in recent years is that of the Committee on Social Studies of the Commission on the Reorganization of Secondary Education, from whose report a brief quotation, concerning aim, was made above. The "alternative programs" proposed for Grades VII to IX were as follows:

GRADE VII: (1) Geography — $\frac{1}{2}$ year.

European history — $\frac{1}{2}$ year.

Or, (2) European history — 1 year.

Where the first plan is followed it is suggested that the two courses may be taught in sequence, or in parallel through the year. Where the second plan is followed, geography is to be "taught incidentally to, and as a factor in," the history. The European history recommended is "European Beginnings of American History." Civics is to be taught as a phase of these or other subjects, or segregated in one or two periods a week, or both.

GRADE VIII: American history — $\frac{1}{2}$ year.

Civics — $\frac{1}{2}$ year.

Geography is to be taught incidentally to, and as a factor in, these subjects.

GRADE IX: (1) Civics — $\frac{1}{2}$ year.

Civics, economic and vocational aspects —
 $\frac{1}{2}$ year.

Or, (2) Civics, economic and vocational, and economic history — 1 year.

During the first half-year in ninth grade under plan (1) the civics of the preceding year is to be continued but "with more emphasis upon state, national, and world aspects." Moreover, history is to be introduced in rela-

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tion to the topics of the courses named. The two subjects in the second plan are to be taught either in sequence or in parallel. Except for that portion of the work in civics which is to be economic and vocational, it is to be of the "community" type, a term used to distinguish it from "civil government," which had to do largely with the mechanics of government.

Although not followed in detail in anything like all re-organized school systems, the recommendations of this committee have been widely influential in securing a realignment of social studies and courses. As may be inferred from the data compiled by Rodgers, which were cited in the opening paragraphs of this treatment of social studies, the items least often accepted are perhaps the reduction to a half-year each of geography in seventh grade and of American history in eighth grade.

Important reports including suggestions for junior-high-school grades have been made by other committees, for example, the Committee on History and Education for Citizenship in the Schools, which was a joint committee of the American Historical Association and the National Board of Historic Service in coöperation with the Commission on a National Program for Education of the National Education Association, and by the Committee of the American Sociological Society on the Teaching of Sociology in the Grade and High Schools of America. The large extent of similarity of the recommendations of these committees is to be seen in the following quotation from the report of the committee last named:¹

Grades VII, VIII, and IX: Geography with special emphasis on the social side; American history and government, with

¹ Ross L. Finney (Chairman), "Tentative Report of the Committee of the American Sociological Society on the Teaching of Sociology in the Grade and High Schools of America," *School Review* (April, 1920), Vol. XXVIII, pp. 260-261.

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some attention to the European background, and emphasis on the economic and social side; and elementary social science or "community civics." This we understand to be in substantial accord with the recommendations of the Schafer committee [the former of the two just named] and the Dunn report for the Committee on the Social Studies of the National Education Association Commission on the Reorganization of Secondary Education.

9. The course in elementary social science (commonly called community civics) should be given in the ninth grade under the 6-3-3 plan, but under the 8-4 plan should . . . be divided between the eighth and ninth grades, the other half year in each case being devoted to American history. . . .

In the proposals as cited there are beginnings of suggestions of composite courses in the social studies. Examples are the suggestion of the Committee on Social Studies to teach geography as incidental to history in the seventh grade, and the recommendation, for later grades, of community civics by this committee, and of "elementary social science" by the committee of the American Sociological Society. Another proposal along this line, the most far-reaching so far made, and calling for thoroughgoing committal to the plan of general courses, will be brought up for consideration in illustrating curriculum researches in the social studies, near the end of the present treatment of this group of subjects. Since schools will continue over a long period, if not indefinitely, to administer this field by subjects, even if they are in some measure composite, the following proposal for the three-year junior-high-school period seems not to be out of place:

SEVENTH GRADE: Geography (full year).

EIGHTH GRADE: American history (full year).

NINTH GRADE: (1) Community, economic, and vocational civics (full year).

Or, (2) Community civics ($\frac{1}{2}$ year).

Vocational civics ($\frac{1}{2}$ year).

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This course in the social studies for junior-high-school grades cannot be made without simultaneously suggesting variation from it with regard for important conditioning factors. For example, should the curriculum in grades below not provide contact with the European background of American history, the seventh-grade offering might well be made up of a half-year each of geography and this phase of European history. If properly constituted to include among other elements what is designated as vocational civics, an acceptable ninth-grade course would be the "elementary social science" referred to by the Committee of the American Sociological Society. Again, if large proportions of pupils in a particular junior high school or school system, because of the nature and traditions of the population being served, and the operation of the compulsory education law, drop out at the end of the eighth grade, it would be desirable to place the half-year course in vocational civics in the eighth grade. Taken at this point it would be influential in retaining pupils in school over a longer period, since one of its services is to call attention to the difficulty of getting on in one's life work without more training. When this adjustment is made, it will usually be necessary to postpone the second half-year of American history, this course and the half-year of community civics making up the full year of work in the social studies in the ninth grade. Further justification for the treatment of vocational civics is provided below in the special consideration given this portion of the sequence in social studies.

Geography in the junior high school. The propriety of listing geography with the social studies of the junior high school rather than with the natural sciences is often stressed by leaders in this special field. Thus McConnell, after stating that "there is at present a decided tendency

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to get away from the physical aspects of geography which have been emphasized in the past and to give the subject its social significance," stresses this social purpose in the following words: ¹

Geography can give to students, as can no other study in the junior-high-school curriculum, an abiding and effective interest in peoples of the earth, and in their relationships, problems, advantages, and disadvantages. Its study should so reconstruct one's experiences as to permit one to enter fully and humanely into the activities of men in different regions and different social classes. Its study should lead one to take on a sympathetic attitude toward people in all parts of the earth.

Those who write concerning the plan of geography in the junior high school likewise stress the peculiar appropriateness of this aim for junior-high-school pupils, as, it was shown above, was being done by those who have expressed themselves on the rôle in the junior high school of the social studies in general.

When one seeks for helpful information on the content of courses in geography in these grades, one comes reluctantly to the conclusion that there has been a dearth of inquiry along this line. The deficiency is implicit, if not apparent, in the following: ²

➤ The two-cycle series of textbooks today are a misfit because the first half of the second book is designed for the sixth grade of the elementary school, and the second half for the seventh grade or first year of the junior high school. The one-cycle series are no better because here again the series is split between elementary and junior high schools. If geography is to hold its place in the junior high school, a two-cycle series must be maintained, but the first cycle must close with the sixth

¹ W. R. McConnell, "The Place of Geography in the Junior High School," *Journal of Geography* (February, 1924), Vol. XXIII, p. 53.

² E. E. Lackey, "The Selection of Geographical Material for Junior High School," *Journal of Geography* (April, 1926), Vol. XXV, p. 141.

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year of the elementary school, and a new book must be designed for the junior high school in which all the known aims of the school are recognized and the materials of geography selected accordingly.

The diversity of opinion as to what should constitute junior-high-school geography appears in the following contrast of proposals. The writer just quoted contends that "we cannot abandon the political unit as the area of study," insisting that the treatment of "national and political entities" (being social) will bring together the aims of geography and the aims of the reorganized school.¹ On the other hand, another worker in the field urges the treatment of subjects as world units:²

A single subject, as an industry, should be studied with sufficient detail to assure understanding of human relationships. This study should follow production of the raw material through its transportation, its market, its manufacture into a finished product, through transportation again to its final market and consumption. It should include any allied industries; the influence of success or failure upon other industries; the significance of a stable government, sound money system, banks, telephone, telegraph, radio, tariffs, postal system, highways, etc., in the success of the major industry under consideration; and the influence of production and of demand in other countries.

Any one of many subjects may be chosen for the accomplishment of our objectives. The following series will serve to illustrate types of major subjects: (1) wheat, with elevators, markets, flour milling; (2) animal foods, with live stock, markets, meat-packing; (3) coal, with iron and steel, machinery, transportation; (4) power, with coal, oil, water, manufacturing; (5) cotton, with textile manufactures; (6) forests, with lumber, pulp, paper, construction, conservation; (7) agri-

¹ Ibid. p. 141.

² George J. Miller, "Geography as a Social Science in the Junior High School," *Educational Review* (November, 1925), Vol. LXX, p. 216.

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culture; (8) manufacturing; (9) commerce of the world with trade routes. Nongeographic factors should be woven into each study. These major subjects should be studied as world units but, of course, with emphasis on the United States.

Until some basic principles of selection and organization of content can be arrived at, we shall continue to have such disagreements as to the proper make-up of geography in our new educational unit. In the meantime we shall need to be satisfied to follow such suggestions or continue the geography which completes the cycle begun in the elementary school and continue also to introduce it incidentally in other courses in the social studies. It is unfortunate that we cannot at once institute the type of work on the high level of value inherent in the subject.

American history. Little will be said concerning the course in American history except to reëmphasize that, in accordance with the demand for the dominance of the social aim in such a subject, there is need of clearly recognizing this aim in the selection of content with which the pupil is brought in contact. That this is far from universally done may be inferred from the average number of pages reported by Bobbitt to be found to deal with certain social and economic topics in elementary textbooks in American history, as shown in Table XXIV. The list of topics is, to be sure, not comprehensive of all those of social and economic significance which should have attention in any course aiming to give an understanding of modern ways of living and of modern problems as they make themselves manifest in one's country. It is, nevertheless, sufficiently extended to illustrate the inadequacy to social education of the elementary text used in this field a few years ago. With social and economic problems thus meagerly recognized, it is to be concluded that military and political phases made up the bulk of the remaining

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pages. It is not to be denied that the second of these phases, the political, is also significantly social and requires stressing, but there is no vital reason why it and the military phase should eclipse the others to the extent to be inferred. One may well scout the suggestion that the

TABLE XXIV. AVERAGE NUMBER OF PAGES DEVOTED IN TWELVE ELEMENTARY TEXTS IN AMERICAN HISTORY TO CERTAIN SELECTED SOCIAL AND ECONOMIC TOPICS ¹

TOPIC	PAGES	TOPIC	PAGES
1. Inventions	5.3	13. Domestic commerce . .	1.0
2. Tariff and free trade . .	3.7	14. Labor organizations . .	0.6
3. Railroads	2.7	15. Savings banks	0.6
4. Canals	2.5	16. Newspapers and maga- zines	0.5
5. Manufacturing	2.5	17. Postal service	0.5
6. Foreign commerce	2.3	18. Fisheries	0.4
7. Mining	2.3	19. Telephone	0.4
8. Banks and banking	2.0	20. Wages	0.2
9. Relations of labor and capital	1.8	21. Patents and copyrights	0.0
10. Agriculture	1.4	22. Child labor	0.0
11. Roads and road trans- portation	1.2	23. Women in industry . . .	0.0
12. Telegraph	1.1	24. Unemployment	0.0
		25. Cost of living	0.0

typical text in use today is as much better than those analyzed by Bobbitt as it should be. The social emphasis will call for still further modification.

Community civics or elementary social science. The standpoint and aims of the course in community civics have been well put by Hill: ²

As employed by those who adhere to the newer conceptions of the teaching of civics, the term citizenship embraces much

¹ From Franklin Bobbitt's "The Curriculum" (Houghton Mifflin Company, 1918), pp. 110-111.

² Howard C. Hill, "The Teaching of Civics in the Junior High School, with Special Reference to the Work in the Ninth Grade," *Historical Outlook* (January, 1926), Vol. XVII, pp. 7-8.

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more than the political phases of human life. While regarding the subject of government as rightfully occupying an important part in an adequate course, they believe that civic instruction should also include information and training in other aspects of human relationships, in economic and social matters, as well as in political elements.

For such reasons advocates of the new civics believe that the junior-high-school grades should provide instruction that will serve primarily as an introduction to the study of society; that the course in civics should be of such character as to inculcate in boys and girls an understanding and appreciation of their social environment, its character, its needs, and its problems; that when properly devised the course will prove instrumental in developing in the pupils social attitudes and social behavior; that an understanding of society when combined with social attitudes and social behavior will result in an adjustment to and control of the social environment to the end that the common welfare may be advanced; that the promotion of the common welfare is the goal of all genuine training in citizenship.

The outline suggested for such a course by the same writer is made up of five "parts" and thirty-three "units", the percentage distribution of time to the respective parts being 18, 18, 14, 20, and 30:¹

PART ONE: COMMUNITY LIFE

1. Living together
2. The family and the home
3. The school and education
4. The church and religion
5. The neighborhood and the community
6. The nation and our country
7. The world and our neighbors in other lands

¹ Howard C. Hill, "The Teaching of Civics in the Junior High School, with Special Reference to the Work in the Ninth Grade," *Historical Outlook* (January, 1926), Vol. XVII, p. 10.

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PART TWO: COMMUNITY WELFARE

8. Safeguarding health
9. Establishing protection against fire
10. Securing safety from disorder
11. Providing enjoyment and recreation
12. Promoting community planning and civic beauty
13. Aiding the handicapped

PART THREE: GOVERNMENT AND CITIZENSHIP

14. Our local governments
15. The state government
16. The governing of the nation
17. Selecting government officials
18. Meeting government expenses
19. Rights and duties of citizenship

PART FOUR: INDUSTRY AND BUSINESS

20. Making a living
21. Thrift and conservation
22. Buying and selling
23. Transferring goods
24. Sending messages
25. Working together

PART FIVE: OCCUPATIONS

26. Choosing one's work
27. Farming, forestry, mining
28. Manufacturing and building
29. Transportation and shipping
30. Merchandising and banking
31. Serving the public
32. The professions
33. Succeeding in one's work

The range of content of this outline is much wider and therefore has more ramifications of social significance than that originally proposed for the course in community

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civics by the special committee of the Commission on the Reorganization of Secondary Education.¹ This older outline, influential as it has been in the improvement of instruction in the field, contained but eleven "elements of welfare" and three "topics dealing with the mechanism of community agencies." The elements were (1) health, (2) protection of life and property, (3) recreation, (4) education, (5) civic beauty, (6) wealth, (7) communication, (8) transportation, (9) migration, (10) charities, and (11) correction. The topics were (12) how governmental agencies are conducted, (13) how governmental agencies are financed, and (14) how voluntary agencies are conducted and financed. Among major additions that would be made by following Hill's outline are what are usually referred to as economic civics and vocational civics. It is deserving of comment that, including the fifth part and certain units of the fourth part, this outline would devote not less than a third of this course to a consideration of occupational life.

The aims of the course in community civics, and the content proposed, mark it as the type of offering that should be prescribed for all pupils. The grounds for prescribing it are surely no less firm than those urging the requirement of geography and American history. It is difficult to offer any better extenuation for making it a variable or an alternative with ancient history, as Rodgers's data show is sometimes done, than is afforded by too great a respect for curricular tradition or the obstacles to finding teachers prepared to give the instruction.

Vocational civics. The "occupations," or vocational-civics constituent of the outline in community civics just considered, call attention to the fourth and last of the

¹ As reported in "The Teaching of Community Civics," *United States Bureau of Education Bulletin No. 23* (1915).

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elements listed earlier in this treatment of social studies regarded as essential in the training of all pupils in junior high schools. This element has two chief purposes, the first of which has been placed in an appropriate setting by Glass:¹

1. The mission of the junior high school is to reveal to pupils, first, through general exploratory courses, their aptitudes and interests; second, the educational possibilities for the training of their aptitudes and the development of their natural interests; and, third, the vocational opportunities in which the aptitudes and interests when revealed and developed may find proper and useful employment. On vocational civics and other similar guidance work of the junior high school falls the burden of the third objective. Vocational civics, therefore, is an integral part of a social science course, but, even more important, it is fundamental to the purposes of the junior high school. Use Civics define

This purpose of the course is so much in accord with the special service in guidance of the junior high school that for one to propose the constants in a program of studies without it or some other equally pertinent regularly appointed avenue of becoming acquainted with opportunities and lines of employment is enough to disclose one's failure to apprehend the meaning of the junior-high-school movement. Another means sometimes used of providing this information is the introduction of the study of occupations as a part of English composition. It may be argued that this means also affords an excellent motivation for the work in composition. On the other hand, it is more difficult to secure a uniformly high degree of interest in it on the part of all teachers of English in a school than

¹ James M. Glass, Curriculum Practices in the Junior High School and Grades V and VI, Supplementary Educational Monograph No. 25, pp. 132-133. The University of Chicago Press, 1924.

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on the part of a single teacher of such a separate course or such an element in some other social study. Should it be argued that contacts with occupations are provided with exploratory industrial arts and the like, it may be answered that this would seldom be with more than industrial or commercial occupations, leaving the pupil ignorant of many other lines of employment.

But the course in vocational civics — or “occupations,” or the “life-career” course, as it is sometimes called — has a major purpose other than that of providing occupational information, even more fittingly allying it with the group of social studies. It may and should be so presented as to give the pupil a better understanding of the world's work, merely from the standpoint of imparting a more comprehensive social intelligence and developing a discerning sympathy with those in other lines of work. This additional purpose is sufficiently important alone to warrant offering the course; therefore it should not be left out of account in planning and administering the content.

As to the content, the course in vocational civics should make a survey of the world's work, and should study a number of groups of occupations and specific employments. This study may consider their value in social service, the personal qualities required for successful participation, the preparation necessary for entrance,⁴ the remuneration,⁵ the working season,⁶ the social status of the workers, etc.

Illustrative researches toward curriculum-making in social studies. Although it is out of the question to review here all the researches that have been made having some bearing on the curriculum in the social studies, space should be spared at least for illustration. This will be accomplished by resort to three such researches. The first of these, by Almack, involved the listing of the measures that have been submitted to the state electorate through the ini-

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tiative and referendum.¹ The total number of measures was six hundred and fifty-five, these having been submitted in thirty different states. The number of times each was submitted is shown in Table XXV. The significance of such a study is in the suggestions it affords for problems on which the citizen must be informed in order to discharge intelligently his responsibilities as a voter.

TABLE XXV. NUMBER OF TIMES TOPICS RECURRED IN 655 MEASURES SUBMITTED TO THE ELECTORATE THROUGH THE INITIATIVE AND THE REFERENDUM

RANK AND TOPIC	TIMES SUBMITTED	RANK AND TOPIC	TIMES SUBMITTED
1. Taxation	85	15. Dependents, delinquents, defectives	17
2. Liquor	48	16. Industry	15
3. Education	39	17. Public morals	11
4. Legislation	37	18. Constitution	10
5. Elections	37	19. Natural resources	10
6. Counties	36	20. Public health	10
7. Roads	33	21. Fish and game	9
8. Finance	33	22. Printing, publishing	9
9. Labor	29	23. Public works	9
10. Suffrage	28	24. Irrigation	8
11. State and county officers	27	25. Public safety	6
12. Public utilities	23	26. Miscellaneous	45
13. Judiciary	21		
14. Cities	20		

The second illustrative research is one by Sharon cited by Horn.² The method is that of analysis of two weeks' issues of each of nine representative newspapers. The assumption in the study is that important problems will find their way into such publications and that their relative

¹ John C. Almack, "The Course in Civics for Junior High Schools," *School and Society* (December 18, 1920), Vol. XII, pp. 623-624.

² Ernest Horn, "The Application of Methods of Research to Making the Course of Study in History," *Twenty-second Yearbook of the National Society for the Study of Education* (1923), Part II, chap. xiv, pp. 242-243.

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importance will be approximately shown in the frequency of appearance and the amount of space they occupy. Sharon's findings are presented in Table XXVI. Because the results obviously reflect the peculiar emphasis in a relatively short period, to ascertain what problems are kept before the public this kind of research would, as Horn asserts, need to be continued and extended to magazines.

TABLE XXVI. FREQUENCY OF APPEARANCE AND SPACE OCCUPIED BY PROBLEMS FOUND IN AN ANALYSIS OF NEWSPAPERS

PROBLEM	NUMBER OF ARTICLES	TOTAL LENGTH IN LINEAR INCHES
1. Taxation	92	1,058.0
2. Foreign relations (omitting immigration).	30	705.8
3. Suffrage	51	559.8
4. Monopoly and legislation	45	551.8
5. Public-service commissions	37	450.5
6. Liquor and prohibition	31	339.5
7. Money and banking	14	186.0
8. Employers and labor	7	102.5
9. Pensions	7	88.0
10. Workmen's compensation	10	78.8
11. Conservation of natural resources	3	42.0
12. Child labor	1	2.8
13. Miscellaneous	50	760.8

The extent of curriculum research in the social studies is suggested in the statement that this is one of twenty-four researches following various procedures which were summarized by Rugg for the Third Yearbook of the Department of Superintendence.¹

Composite courses in the social studies. The third of the researches to be cited is a coöperative investigation by Harold O. Rugg, Earle U. Rugg, and Emma Schweppe.

¹ Research in Constructing the Elementary-School Curriculum, chap. vii. Department of Superintendence of the National Education Association, 1925.

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It is described here for two reasons: first, because it is the most extended piece of research so far undertaken in the field, and secondly, because it represents the best procedure in use for establishing a basis for composite courses. Other proposed steps toward composite courses were reported earlier in their treatment of the social studies.

The investigation referred to has been directed toward the discovery of what are called the "problems of contemporary life" and the materials and methods of properly presenting them to pupils on this school level. The method of finding the "insistent problems of the day" was by an analysis of a large number of books dealing with the issues of social life and written by a host of specialists — "frontier thinkers."¹

Some of the hypotheses on which the course developing out of these investigations is being constructed are the following:²

1. Current modes of living, contemporary problems and their historical backgrounds can be learned more effectively through one unified social-science curriculum than through the separate school subjects, history, geography, civics, and economics. . . . ✓

2. Each major topic of the course must be of established social value to the rank and file of our people. . . . ✓

3. An objective analysis of social needs facilitates the assignment to each of the major phases of life, its proper amount of attention in the curriculum; the traditional method cannot do so except by chance. . . . ✓

4. Each topic and subtopic of the course shall be illustrated by detailed episodes and by a wealth of maps, graphs, and pictorial material far in excess of the present use of them. . . .

¹ Harold O. Rugg, "Problems of Contemporary Life as the Basis of Curriculum-Making in the Social Studies," Twenty-second Yearbook of the National Society for the Study of Education (1923), Part II, chap. xv.

² Harold O. Rugg, Earle Rugg, and Emma Schweppe, "A Proposed Social-Science Course for the Junior High School," Twenty-second Yearbook of the National Society for the Study of Education (1923), Part II, chap. vi, pp. 187-191.

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5. The reading materials and the exercises should be set so as to stimulate analysis and reasoning. . . .

6. Historical backgrounds will be clearer if the history of only one set of related topics is traced at one time. . . .

7. One problem topic, or at most one restricted group of problems and topics, should be considered definitely and thoroughly at one time. . . .

A partial list of the contemporary problems located after the manner described, with examples, is here given.¹ The total list from which they are cited contains three hundred problems.

A. Problems of immigration

Examples: 1. Problem of determining on what bases to admit immigrants

2. Problems of safeguarding the transportation of immigrants from their homes to America

B. Problems which deal with natural resources

Examples: 1. How can we provide for the widespread ownership and development of farm land and homes?

2. Problem of making available adequate rural credits

C. Problems of industry and business

Examples: 1. Problems of securing the fullest coöperation between labor and capital

2. Problem of providing continuous employment for all

3. Problem of utilizing government control to secure efficient and fair administration of concentrated forms of industry and business

4. Problem of determining what shall constitute a fair price

D. Problems involved in developing and maintaining an adequate and efficient transportation system in America

¹ Harold O. Rugg, "Problems of Contemporary Life as the Basis of Curriculum-Making in the Social Studies," Twenty-second Yearbook of the National Society for the Study of Education (1923), Part II, pp. 269-272.

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Example: 1. Problem of correlating our rail, water, and motorized transportation

E. Problems of the American city

Example: 1. Problem of how to give to community life, both urban and rural, the physical situation and the intimate neighborhood relations which are typical of the American suburban community

F. Problems of education and the formation of intelligent public opinion

Examples: 1. Problem of adult education in citizenship
2. Problem of adult education by the dissemination through the press of the essential facts concerning contemporary economic, social, and political matters

G. Miscellaneous social problems

Example: 1. Problem of making the impoverished economically independent

H. Problems of government in the American democracy

Examples: 1. Problem of determining what the government should do — the services it should render

2. Problems of insuring that a particular form of government is effective; for example, how can we secure simple, direct, responsible government in a nation of large territory?

J. Problems of world affairs

Examples: 1. Problem of developing a science of world politics, "so that wastes and war can be eliminated and the common interests of mankind brought under common control"

2. Problem of civilizing backward peoples and of developing undeveloped lands

One city system in which the content of the course in social studies in junior-high-school grades is an adaptation of the results of these investigations is that of Denver.¹

¹ Social Science [in] Grades Seven, Eight, and Nine, Junior High School, Course of Study Monograph No. 3. Public Schools of Denver, Colorado, 1924.

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The "problems" in the three-year program in "social science" are distributed to "units," those for each grade being as follows:

GRADE VII

Unit I: Community life

Unit II: The industrial life of the American people

Unit III: The interdependence of modern industrial peoples

Unit IV: The changing agricultural nations

GRADE VIII

Unit V: The westward movement and the growth of transportation

Unit VI: The history of the Industrial Revolution

Unit VII: The growth of American democracy

GRADE IX

Unit VIII: Forms of American government and outstanding citizenship problems

Unit IX: Waste and conservation of American resources

Unit X: Immigration and Americanization

Unit XI: International relations

To illustrate the problems of which these units are made up one may cite the first three of fourteen under Unit V:

PROBLEM I. How does America compare in historical age with the other countries of the world?

PROBLEM II. Why did the white man come to America?

PROBLEM III. Why did the English begin to settle in North America?

On a large chart accompanying this published course of study the content of the units is classified under the conventional subject headings, showing how it has drawn upon civics, history, geography, and vocational civics. It is to be admitted, however, that the recognition of vocational civics is not so generous as the need of junior-high-school pupils and the special purposes of this school seem to require.

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While perhaps the merits of the completely composite social-science course may not yet be fully demonstrated to all those who have considered it, it may be said that it is in line with the trend in other subject fields in the junior high school — in English, mathematics, science, the industrial arts, and other fields.

Variable or elective courses in the social studies. The social studies as a group are so vital to that training which is to be common to all, namely, the constant portions of the program, that they are not one of the most fruitful fields for variable or elective subjects. To be sure, in the transition stage from tradition to an appropriate arrangement of constants, subjects that have been proposed above as prescriptions for all will often, when first offered, be placed among electives. Such is often the experience with community civics and vocational civics; but this practice should not persist over a long period in any school. Among the courses which may in some situations be thought of as appropriate for variables are ancient history, certain social-business courses like commercial geography (to be referred to again in the next chapter), and occasionally others. Here also may be mentioned such extra-curricular activities as civics clubs and the like, especially when these activities are regularly scheduled and thereby nearly curricularized.

MATHEMATICS

Status in junior high schools. One may conclude from data presented by Rodgers as quoted in Table XVII in Chapter V that (1) there is infrequent deviation in two-year junior high schools from arithmetic as the requirement in both grades. A small proportion of schools require general mathematics in both grades instead, and an even

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smaller proportion make algebra a constant or a variable in the eighth grade. (2) Among three-grade schools operating constants-with-variables programs, a larger proportion substitute "mathematics" for arithmetic in the first two grades, or algebra in the eighth grade. In ninth grade approximately equal proportions require either general mathematics or algebra, and a smaller number than follow this practice place the courses in arithmetic or algebra, or both, in the variable portions of the program. (3) In three-grade schools operating differentiated curricula, mathematics is usually required throughout the academic curriculum, with what Rodgers tabulated as general mathematics in the first two grades, and either this course or algebra in the third. In practical-arts curricula the situation is rather similar, with somewhat more tendency to make algebra elective or to require general mathematics in ninth grade. Commercial curricula manifest a notable deviation by more frequently prescribing arithmetic (sometimes "commercial" arithmetic) and much less frequently prescribing algebra in ninth grade, this practice being similar to that followed in such curricula in the first year of four-year high schools.

One may generalize on the situation by saying that, with a good minority of exceptions, junior high schools prescribe some type of mathematics in all junior-high-school grades.

The rôle of mathematics in the junior high school. The general place of mathematics in the junior high school has been succinctly described by Brown.¹

A subject which is related so intimately to the needs and interests of mankind as mathematics must be given a prominent place in the curriculum of the junior high school. The

¹ J. C. Brown, "The Geometry of the Junior High School," *Mathematics Teacher* (February, 1921), Vol. XIV, pp. 64-65.

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subject may be so taught as to emphasize its application to the everyday problems of life outside the school and, when so taught, it loses none of the charm which has attracted to it some of the best minds of the ages. . . . The more firmly "the roots are imbedded in the soil of reality" the stronger and more attractive should be the appeal.

With the important place of mathematics admitted, the question arises as to what are its aims. Mathematics in the junior high school must, of course, contribute to the achievement of the aims for this subject as set up for the secondary school as a whole. At this writing the formulation having currency with many teachers of the subject is that approved by the National Committee on Mathematics. When it is much abridged, this formulation is as follows:¹

I. *Practical aims*

1. Skill in the *fundamental processes of arithmetic*
2. Understanding of the *language of algebra*
3. Ability to understand and use the *fundamental laws of algebra*
4. Ability to understand and interpret *graphic representations*
5. Familiarity with geometric forms and mensuration, development of space perception, and exercise of *spatial imagination*

II. *Disciplinary aims*

1. Acquisition of those *ideas or concepts in terms of which the quantitative thinking of the world is done*
2. Development of *ability to think clearly in terms of such ideas and concepts*
3. Acquisition of beneficial mental habits and attitudes
4. Training in "functional thinking," that is, in terms of and about relationships

¹ Summarized from "The Reorganization of Mathematics in Secondary Education," a Report by the National Committee on Mathematical Requirements (1923), pp. 6-10.

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III. *Cultural aims*

1. *Appreciation of beauty* in the geometrical forms of nature, art, and industry
2. *Ideals of perfection* as to logical structure, precision of statement, etc.
3. *Appreciation of the power of mathematics* and the rôle that mathematics and abstract thinking have played in the development of civilization

There may be some — perhaps many — readers to whom this formulation, because the categories in such large part lean toward disciplinary concepts, is to some extent unacceptable on general grounds. This is not, however, so significant a question for purposes here as whether or not, even if it were generally acceptable, it takes sufficient cognizance of the distinctive services the junior high school is called upon to render. Having been set up for the secondary-school period as a whole, the formulation might easily, as has manifestly been done, leave these services too largely out of account. For this reason it is appropriate to list certain "conditions" under which one writer has proposed that the work in mathematics in the junior high school should be carried forward. Margaret E. Davis urges that this course in mathematics contain work ¹

(1) which is suitable for all pupils approximately twelve through sixteen years of age

(a) who will remain in school and pursue elective mathematics in the senior high school, and

(b) who for various reasons will assuredly leave school early, and who ought to be given some insight into mathematics of a varied and vocational character ;

(2) which reveals the pupils' interests, aptitudes, and capacities by the use of mathematical material in itself worth while ;

¹ Margaret E. Davis, "The Teaching of Mathematics in the Junior High School," *Mathematics Teacher* (September, 1920), Vol. XIII, pp. 13-14.

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(3) which opens up the mathematical possibilities in the senior subjects and in several industries of local importance;

(4) which provides for individual mathematical differences by differentiated curricula and by the organization of groups homogeneous in ability;

(5) which uses methods intermediate between those of the elementary and the high school;

(6) which provides for specially prepared teachers of mathematics, through the partial or full use of the departmental plan;

(7) which uses subject matter that will meet immediate and certain assured future needs along social and economic lines.

The relationship of most of these conditions, especially of (1), (2), and (3), to the performance of important peculiar functions, for example, recognition of individual differences, and exploration and guidance, is so vital, that junior-high-school mathematics would not rise to its possibilities if those in charge of it failed to take account of these conditions in their working aims.

Proposed junior-high-school offerings. A variety of proposals concerning the content of mathematics in the junior high school and its arrangement by grades has been made. Infrequently they call for complete obedience to tradition by making up the courses in the seventh and eighth grades solely of arithmetic and in the ninth grade exclusively of algebra. More often they urge some progress toward composite courses, made up in varying portions of two or more of the following divisions of the field: arithmetic, algebra, geometry, trigonometry, and statistics. The composite course is advocated as being in harmony with development of general courses in other lines, as in science and the social studies.

The most influential of the proposals is that of the National Committee, whose formulation of aims has already been presented. These are made by suggesting

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five plans, no one of which is recommended as superior to the others.¹ It is proposed further that all three years of the work be prescribed for all pupils.

PLAN A

First year: applications of arithmetic, particularly in such lines as relate to the home, to thrift, and to the various school subjects; intuitive geometry.

Second year: algebra; applied arithmetic, particularly in such lines as relate to commercial, industrial and social needs.

Third year: algebra, trigonometry, demonstrative geometry.

By this plan the demonstrative geometry is introduced in the third year, and arithmetic is practically completed in the second year.

PLAN B

First year: applied arithmetic (as in plan A); intuitive geometry.

Second year: algebra, intuitive geometry, trigonometry.

Third year: applied arithmetic, algebra, trigonometry, demonstrative geometry.

By this plan trigonometry is taken up in two years, and the arithmetic is transferred from the second year to the third year.

PLAN C

First year: applied arithmetic (as in plan A), intuitive geometry, algebra.

Second year: algebra, intuitive geometry.

Third year: trigonometry, demonstrative geometry, applied arithmetic.

By this plan algebra is confined chiefly to the first two years.

PLAN D

First year: applied arithmetic (as in plan A), intuitive geometry.

¹ The Reorganization of Mathematics in Secondary Education, a Report by the National Committee on Mathematical Requirements (1923), pp. 29-30.

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Second year: intuitive geometry, algebra.

Third year: algebra, trigonometry, applied arithmetic.

By this plan algebra is confined chiefly to the last two years.

PLAN E

First year: intuitive geometry, simple formulas, elementary principles of statistics, arithmetic (as in plan A).

Second year: intuitive geometry, algebra, arithmetic.

Third year: geometry, numerical trigonometry, arithmetic.

The nature of the content of the main divisions mentioned in these plans is suggested in the following lists of topics named by the National Committee in descriptions which cannot be quoted in full here:¹

Arithmetic: the fundamental operations; tables of weights and measures in general practical use; simple fractions; short cuts in multiplication and division; percentage; line, bar, and circle graphs; arithmetic of the home, community, banking, and investment; statistics, inclusive of fundamental concepts, statistical tables and graphs, pictograms, and graphs showing simple frequency distributions.

Intuitive geometry: direct measurement of distances and angles by means of a linear scale and protractor; areas of square, rectangle, parallelogram, triangle, and trapezoid; circumferences and area of a circle; surfaces and volumes of solids; construction of corresponding formulas; indirect measurement by means of drawings to scale; geometric forms in nature, architecture, manufacture, and industry; simple geometric constructions with ruler and compasses, T square, and triangle, such as that of perpendicular bisector, bisector of an angle, and parallel lines; familiarity with such forms as the equilateral triangle, the 30° - 60° right triangle, and the isosceles right triangle; symmetry; knowledge of such facts as those concerning the sum of the angles of a triangle and the Pythago-

¹ The Reorganization of Mathematics in Secondary Education, a Report by the National Committee on Mathematical Requirements (1923), pp. 21-26.

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rean relation; simple cases of geometric loci in the plane and in space; informal introduction to the idea of similarity.

Algebra: the formula; graphs and graphic representations in general; positive and negative numbers; the equation—linear equations in one unknown, simple cases of quadratic equations, equations in two unknowns, and various simple applications of ratio and proportion; algebraic technique—fundamental operations, factoring, fractions, exponents, and radicals.

Numerical trigonometry: definition of sine, cosine, and tangent; their elementary properties as functions; the use of tables of these functions, to three or four places.

Demonstrative geometry: the demonstration of a limited number of propositions, with no attempt to limit the number of fundamental assumptions, the principal purpose being to show to the pupil what "demonstration" means.

It is often proposed that most if not all the intuitive geometry introduced may well precede the work in algebra. Brown has summarized the advantages of this position:¹

The subject is more concrete than algebra; it admits of more simple illustration; it relates directly to the arithmetic that has preceded; it challenges the interest of the pupil; and it may be made very practical. Some knowledge of geometric forms and mensuration is desirable in almost every walk of life.

Content of textbooks for these grades. Because courses not unlike those proposed by the National Committee have been advocated for some years, textbooks designed to facilitate putting them in operation have also made their appearance. It is possible therefore to make direct comparison of the content of these new texts in "junior-high-school mathematics" with that in texts following the older type of organization, that is, texts in arithmetic intended for seventh and eighth grades and texts in alge-

¹ J. C. Brown, "The Geometry of the Junior High School," *Mathematics Teacher* (February, 1921), Vol. XIV, p. 66.

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bra for ninth grade. Such a comparison has been made after a detailed analysis of content by Alma Gaardsmoe, some of the findings being shown in Table XXVII and Fig. 20, which report the average percentages of materials classifiable as arithmetic, geometry, algebra, statistics, and trigonometry found for each grade in eight texts following

TABLE XXVII. AVERAGE PERCENTAGES OF SPACE IN TEXTBOOKS USED IN GRADES VII, VIII, AND IX DEVOTED TO VARIOUS DIVISIONS OF MATHEMATICS ¹

DIVISION OF CONTENT	GRADE AND TYPE OF TEXTBOOK					
	VII		VIII		IX	
	Arith- metic	Junior Mathe- matics	Arith- metic	Junior Mathe- matics	Algebra	Junior Mathe- matics
Arithmetic . .	85.5	56.2	83.8	57.4	2.0	6.3
Geometry . .	10.5	36.6	12.4	15.3	2.3	13.9
Algebra . . .	2.0	2.3	2.7	19.7	91.6	66.7
Statistics . . .	2.0	4.9	1.1	6.1	3.1	6.1
Trigonometry .				1.5	1.1	6.9
<i>Total</i>	100.0	100.0	100.0	100.0	100.1	99.9

the older designations and in five texts going under the new name. The texts represented were those found to be in most frequent use in large numbers of reorganized and unreorganized schools. The percentages for the texts in junior-high-school mathematics disclose a marked deviation from the traditional distribution of content, with distinct progress toward composite make-up in each year. The averages as reported hide wider differences within each of the two groups of texts, but it is clear that the shift of content and organization, even in this early stage

¹ Adapted from Table XIV, pp. 55-56, in Alma C. Gaardsmoe's "Present Status of Mathematics in Grades VII, VIII, and IX," a master's thesis on file in the Graduate School of the University of Minnesota (1925).

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of change, is unequivocal and at least in the larger outlines in conformity to the recommendations.

Related curriculum research. A rather large number of studies relating to mathematics in seventh, eighth, and ninth grades have been made. Schorling, at the time of

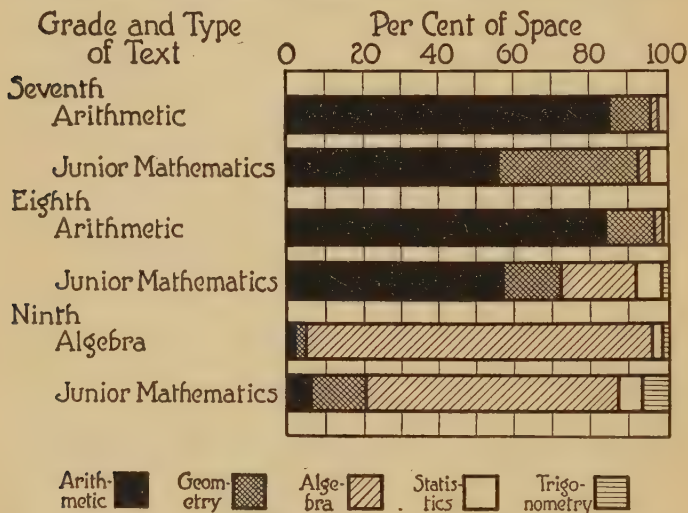


FIG. 20. Average percentages of space in textbooks used in seventh, eighth, and ninth grades devoted to various divisions of mathematics (From Table XXVII)

reporting an extended investigation into the objectives of junior-high-school mathematics, summarized the findings of twenty-nine such studies.¹ One of these, made by Wilson, has already been referred to in Chapter II in the discussion of the function of economy of time. The chief conclusion educible from this study leads toward a simplification of content in upper-grade arithmetic to meet

¹ Raleigh Schorling, *A Tentative List of Objectives in the Teaching of Junior-High-School Mathematics, with Investigations for the Determining of their Validity*, chap. iii, George Wahr, Ann Arbor, 1925.

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everyday social and business uses.¹ Another, by Adams and reported by Bobbitt, aimed to discover from an analysis of popular periodicals the mathematics required to be able to read them.² Near the close of his digest of the findings, Bobbitt concludes that the materials "reveal the fact that arithmetic as an *instrument of thought* is of continual use, and that "the thing found is the *mathematics of fact-presentation*, not the mathematics of computation." A finding of considerable moment is to the effect that for higher mathematics, that is, algebra, geometry, and trigonometry, the reader of such periodicals has scarcely any need.

Schorling remonstrates against this conclusion, citing in opposition the results of his investigation of geometric terms used in issues of *Popular Mechanics* and *Popular Science*.³ He found 211 terms geometric in nature, concluding "that if you vary the material, keeping well within the range of what a considerable number of high-school people read, a large number of geometric terms will be obtained." It is probably to be conceded that for pupils with recreational or exploratory interests along lines represented by such periodicals it is desirable to include some treatment of the terms most frequently found in such an investigation. At the same time, there is no reason to believe that all the terms most frequently found could not be made intelligible to pupils during the progress of that portion of the junior-high-school course in mathematics given over to intuitional or constructive geometry, or in

¹ Guy M. Wilson, *The Social and Business Usage of Arithmetic*, Teachers College Contributions to Education No. 100, 1919.

² Franklin Bobbitt, "The Technique of Curriculum-Making in Arithmetic," *Elementary School Journal* (October, 1924), Vol. XXV, pp. 127-143.

³ Summarized in Raleigh Schorling's "Tentative List of Objectives in the Teaching of Junior-High-School Mathematics, with Investigations for the Determining of their Validity" (George Wahr, Ann Arbor, 1925), pp. 47-50.

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that portion of the arithmetic which is mensurational. This may be seen in the following eighteen terms found more than a hundred times in Schorling's investigation: end, length, side, center, lines, surfaces, position, point, cylinder, space, diameter, base, edge, sections, angle, width, height, and square. While the study of demonstrational geometry may be expected to effect a more nearly complete understanding of such terms, it cannot be regarded as essential to achieving this purpose.

As a major part of the publication in which the researches referred to were summarized, Schorling also reported the results of an investigation in which the endeavor was made to establish a tentative list of objectives leading to the determination of content for the course in junior-high-school mathematics.¹ The objectives were distributed to four sections, namely, attitudes, concepts, abilities, and information, each of the sections being divided into "basic" and "subsidiary" lists. The items in the third section, abilities, were further distributed to fundamental processes as applied to arithmetic, per cents, graphs, statistics, geometry, business forms and devices, fundamental processes as applied to algebraic numbers, special products and factors, transformations, formulas, equations, and trigonometry. Those in the fourth section, information, were distributed to fundamental processes in arithmetic, per cents, arithmetic of the community, home, investments, and banking, arithmetic of special projects, geometry, algebra, trigonometry, and logarithms.

The "tentative" list of objectives was arrived at by subjecting the full list to five criteria: (1) the twenty-nine *objectives studies* reported above as having been summa-

¹ Raleigh Schorling, *A Tentative List of Objectives in the Teaching of Junior-High-School Mathematics, with Investigations for the Determining of their Validity*, chap. v. George Wahr, Ann Arbor, 1925.

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rized by Schorling; (2) the content found in an analysis of seven sets of *junior-high-school texts* in mathematics; (3) practice as found in the *analysis of courses* of study; (4) the *outline by the National Committee*, which was given in brief above; (5) the opinions of a *jury* composed of five leaders in the teaching of mathematics and five "prominent men in general education." The members of the jury were directed to keep in mind the "Cardinal Principles of Secondary Education,"¹ and to assume that each had "a son or daughter with an I. Q. of ninety or higher passing through grades seven, eight, and nine."

A course in mathematics arrived at in this way must have a good deal to commend it, and would doubtless be much better than one with content less discriminatingly determined. At the same time, Schorling very properly designates the objectives as "tentative." Serious objections to the list of objectives as final must arise from the conservative character of some of the criteria, especially the texts, the courses, and the outline proposed by the National Committee. Although all these influences would give some recognition to progressive elements, they are in all probability also more respectful of tradition than a course established on strictly objective bases. Moreover, half of the jury were so intimately associated with this special field that they might show a disposition to overestimate the value of some of the items.

It is worth bearing in mind in addition that the directions given to the jury were conservative in their influence, since they asked each member to assume that he had passing through seventh, eighth, and ninth grades a son or daughter having an intelligence quotient of ninety or higher. Ignoring the question of bringing in the relationship mentioned, it may be said that a *large proportion of*

¹ See first portions of Chapter II of this book.

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pupils in these grades have intelligence quotients lower than ninety. For example, of the pupils in the seventh, eighth, and ninth grades in Austin, Minnesota, reported upon in the treatment of individual differences in Chapter II, 18.8 per cent — almost a fifth — had intelligence quotients of 90 or less, 14.9 per cent having quotients of 81 to 90 inclusive, 3.1 per cent having quotients of 71 to 80 inclusive, and a smaller proportion 70 or less. The likelihood is that this proportion will increase as the junior high school succeeds in retaining pupils formerly eliminated. It seems fair to assume that, *if the limit of intelligence quotients considered had been placed lower, the judgments would have tended to exclude some of the objectives retained on the basis used, and, therefore, to the extent that the judgments were correctly gauged to the mentality required, the items of content for which they call would be too difficult to be prescribed as minimum essentials to be mastered by all junior-high-school pupils.* The conclusions are, of course, more acceptable for pupils of average or better-than-average intelligence.

The duration of the prescription in mathematics. We are thus led by implication to the question For how long a period of years — one, two, or three — should work in mathematics be prescribed for all in the junior high school? The length of the prescription proposed by the present writer in Chapter V is two years, with the approximate equivalent of five periods per week throughout the seventh and eighth grades. Glass has been quoted as proposing five periods before and four periods after initial electives. Practice, as reported near the opening of the present section dealing with mathematics, predominantly favors a three-year requirement, although some schools terminate the prescription with the close of the eighth grade. The National Committee on Mathematical Requirements has been cited as favoring a three-year requirement.

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We lack, of course, the full scientific basis of determining either minimum essentials in this subject or the length of time required to master them. Notwithstanding this lack, it seems fair to urge that not all pupils be held for a three-year prescription in this field. Certainly this should be the case if the third year follows conventional lines by being exclusively or almost exclusively algebra, or algebra and demonstrative geometry. For some pupils who have a right to education on this level, competence in these abstract materials is out of the question. The situation is somewhat improved, although not fully remedied, if the third year is a continuation of the general mathematics of the seventh and eighth grades. The larger the algebraic or geometric (demonstrative) constituent in the ninth grade, the less justifiable is the prescription for all the third-year pupils. Although most pupils should take the ninth-grade course in mathematics, it should be possible for a small proportion with special or general disabilities to have it omitted from their programs. The omission might be accomplished in one of two ways: (1) by placing mathematics with the variables, but making sure through guidance that all take it who should have it, or (2) by prescribing it for all, but exempting from the prescription those who have manifested disabilities in the mathematics of the seventh and eighth grades, or whose needs call for some other kind of work. Each procedure presents its difficulty, the first in seeing that all take the third year of mathematics who should have it, the second in the danger that the prescription will come to be rigidly applied. Because an important function of the junior high school is guidance and therefore the agencies for its performance must be at hand, the obstacles to the first procedure seem more easily surmountable than do the obstacles to the second.

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Limitation of the prescription to two school years has the further support of the opinion that a reasonable formulation of minimum essentials can be compassed in this period. This would not apply to all the content proposed by the National Committee, since the place of much of this content still remains unestablished by the findings of objective investigations. For the most part the knowledges and skills required by all, which are still uncompleted by the end of the sixth grade, are as follows: further training in the fundamental processes; the arithmetic of the home, community, and investment; intuitional geometry; and such aspects of algebra as the understanding of positive and negative numbers, evaluation of formulas, solution of equations in the first degree with one unknown, and the like. Two years seem to be time enough for imparting these. It may be unnecessary to point out that schools differentiating mathematics in the ninth grade for the different curriculum groups, for example, by requiring commercial arithmetic in the commercial curriculum and algebra in the academic curriculum — and there are a number of such institutions — have by this act broken away from prescription of constant mathematics in this grade.

SCIENCE

Current status in junior high schools. Two courses reported by Rodgers as making up almost all the offering in science in the junior high school are physiology (and hygiene) and general science.¹ While each of these has some currency in all grades of the three-year junior unit, the former is more often found in the seventh grade and the latter in the eighth and ninth grades. In junior high

¹ See Tables XVII, XVIII, XIX in this book.

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schools including only two grades, general science appears to be a poor competitor of physiology for a place in the seventh grade, but fares somewhat better in the eighth, becoming there the course predominantly given. In three-year junior high schools operating constants-with-variables programs, general science gains in ascendancy from grade to grade. In such programs these two courses are occasionally listed with the variables in ninth grade. In three-year schools operating differentiated curricula the courses are almost matched in frequency in the prescribed work of all curricula in the seventh grade, the shift being to general science in the eighth and ninth grades, with the latter course often among the electives in the ninth grade, somewhat more often in the academic than in the commercial and practical-arts curricula. It is uncommon for other courses in science, such as physiography or biology, to be given either as prescribed or elective courses.

The aims of science in the junior high school. The relationships of courses in physiology and hygiene to the health aim of education are so patent as to require no elaboration. Although a consensus of opinion on the purposes of general science is not so easily arrived at, there is some approach to agreement. Howe has shown that the aims of this course regarded as most important by teachers of the subject are: (1) understanding, appreciation, and control of one's everyday environment, (2) appreciation of the applications of science in industrial and social life, (3) a fund of valuable information about nature and the sciences, (4) training in the use of scientific method in solving problems, and (5) preparation and foundation for later study of special sciences.¹ Watkins, summarizing

¹ Clayton M. Howe, "What Eighty Teachers think as to the Aims and Subject Matter of General Science," *General Science Quarterly* (May, 1918), Vol. II, pp. 445-458.

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this and three other studies involving three hundred and fifty-three replies, shows 85 per cent stressing three major aims, corresponding with the first, third, and fifth as just listed.¹

The studies just cited reported data referring to general science as chiefly a first course in the four-year high school. It is on this account worth while to quote the following statement by Glass, who had in mind peculiarly the place of science in the junior high school : ²

It is difficult to understand how many pupils in the junior high school can be guided intelligently in their choice of differentiated curriculums unless the field of science is revealed to them and their aptitudes are determined for the science electives which characterize some of the advanced curriculums. For the specific purposes of the junior high school, therefore, science seems indispensable as an important factor in the core curriculum in the semesters prior to the offering of electives.

There is, however, an even more vital reason for courses in natural science in the seventh and eighth grades. The pupil needs to interpret his personal life — for example, he should learn the importance of personal hygiene and right habits of living. He needs to interpret his home environment — for example, food, sanitation, ventilation, etc. He needs to interpret his social environment — for example, water systems, sewage-disposal, lighting, transportation, etc. He needs to interpret the vast significance of science to everyday life and to American industrial life, the development of which is controlled in a large degree by scientific discoveries.

Something of the values ascribed to biology, occasionally offered in and more often advocated for the third year in junior high schools, may be inferred from the following

¹ R. K. Watkins, "The Technique and Value of General-Science Teaching," *General Science Quarterly* (May, 1923), Vol. VII, pp. 235-256.

² James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, Supplementary Educational Monograph No. 25, p. 51. The University of Chicago Press, 1924.

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"general aims" proposed for this division of the work in science in the junior high schools of Denver: ¹

... to broaden the pupil's knowledge of his own body through the study of the structure and functions of plants and animals; to show him how to prevent disease, particularly in its epidemic forms, through sanitation and right living; to make him a good citizen through his knowledge of good health and good living conditions; to tell him of the discoveries in biology which have made for progress in improving human environment; to train him to observe life phenomena accurately; to open his eyes to the great out-of-doors, develop a greater appreciation of his environment, and intensify his "joy of living."

It is not enough to give instruction in science incidentally in some of the other courses of the junior high school. There are occasions in geography, in which, although stressing the social, there must be some recognition of earth science. There will be analogous opportunities in physical education, and in the industrial, the agricultural, and the home arts. But attainment of the values listed is not possible without the regularly appointed opportunities of separate courses in this field.

The proposed offering in science in junior-high-school grades. The Commission on the Reorganization of Secondary Education, in its report on the reorganization of science, listed the sequences in science suitable for four types of situations, three pertaining to large, medium, and small four-year high schools, and one to the junior-senior high school. The proposals for junior-high-school grades in the situation last named is for (1) "general science, including hygiene" in the seventh or eighth year (five periods a week) or both years (three periods a week in

¹ General Science [in] Grades Seven and Eight [and] Biology [in] Grade Nine, Junior High School, Course of Study Monograph No. 2, p. 50. Public Schools of Denver, Colorado, 1924.

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each year), and (2) "biological science, including hygiene," in the ninth year, the courses in this field to consist of general biology, botany, or zoölogy.¹

These proposals for including hygiene with the other courses are in disagreement with the frequent practice, shown by Rodgers as reported above, for listing physiology (and hygiene) as a separate course and more often than otherwise prescribing it for the seventh grade. There seems to be no reason more vital than tradition for thus separating this work pertaining to health either from other portions of science, or, as will be contended in the following chapter, from the work in physical training. In fact, important considerations can easily be mustered for presenting it as a coherent part of the composite course in general science or in combination with physical training.

It may be seen that practice does not follow these proposals in another respect: few junior high schools are offering biology, either as a requirement or as an elective. Most schools prefer to make this work available in the first year of the senior-high-school period. There can be no serious objection to such a procedure. However, if this practice is followed, it is desirable to extend a more generous recognition than otherwise to the biological phases of the course in general science. Where biology is made a ninth-grade offering, especially if it is made a requirement, the course in general science preceding it may well be largely restricted to materials in the physical sciences and in hygiene.

Because the field of science properly presented is highly significant in fitting young people for life in the modern world, the courses in science that have been recommended

¹ Reorganization of Science in Secondary Schools, *United States Bureau of Education Bulletin No. 26* (1920), pp. 22-23.

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for junior high school should be made constant for all pupils. We may explain, but it is difficult to justify, the frequent practice of placing these courses with the variable or elective subjects. Only courses in addition to those proposed, when made available, should be listed with variables and electives.

Illustrative content and organization. Leaders in the teaching of general science have long since abandoned the practice of making up the course in general science, and even of biology, of dissociated portions or chapters of the special sciences. They have been seeking out a principle of organization of content that will make of the courses coherent wholes. The report on the reorganization of science in secondary schools already cited suggested organization of the course in general science around topics to which many specific pieces of work are related.¹ Seven sample topics are given, namely, combustion, water, air and the weather, light and its benefits, work and energy, magnetism and electricity, and nature's balance of life. The suggested content of the first topic may be quoted :

Combustion. Why our homes must be heated at times and cooled at other times ; sources of heat ; kinds of fuel ; making a bonfire ; list of questions about bonfires ; why the fire burns ; lesson on elementary chemistry — elements and compounds ; what becomes of wood when burned ; oxidation ; why stones are not used for fuel ; heat produced by oxidation ; making a thermometer ; effects of heating iron, water, wood ; slow heating of water ; thermostat ; how heat travels ; ways for heating a home ; how the science room is heated ; study of a chimney ; what smoke is ; how common illuminating gas is made ; properties of illuminating gas ; how gas is made in this city ; study of candle flames ; study of Bunsen burner and its use ; carbon dioxide — how produced ; body fires — relation to physiology ; control of fires ; losses from fires and how to prevent them ;

¹ Ibid. pp. 25-28.

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what is a fire insurance company? does the insurance rate in this city indicate that fires are more common here than elsewhere?

Two other organizations by "units" of courses in science for junior high schools will be presented as illustrative of efforts to secure effective arrangements of content.

1. The first is quoted from Morrison, who gives the unitary outline of two courses in elementary science for junior-high-school grades, one chiefly of physical science and the other chiefly of biological science.¹ The former contains the following units: the earth on which we live; weather and climate; our food supply; our water supply; keeping in good physical condition; care and selection of clothing; safeguarding our health; nature and control of fire; heating and ventilating our buildings; man's use of building materials; man's use of machines; how air and water are put to work; man's use of steam and exploding gas; man's use of electricity; lighting our buildings and streets. The second course outlined by Morrison contains the following units: how living things differ from nonliving things; how plants differ from animals; what living things are made of; how plants and animals live; how living things are named; how plants and animals live together; how living things depend upon their physical environment; how we are like other living things; how plant and animal life is improved; how we safeguard our health; how we safeguard the health of our neighbors.

2. The second list of topics is that dealt with in the courses in science in the junior high schools of Denver, where three periods per week are devoted to general

¹ Henry C. Morrison, *The Practice of Teaching in the Secondary School*, pp. 183-184. The University of Chicago Press, 1926.

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science in both seventh and eighth grades, and five periods to biology in the ninth grade.¹ The six units in seventh-grade science are as follows: the sun's gift of heat; the air we breathe; the waters of the earth; weather and climate; how fuels serve man; science in the household. The eight units in the next grade are: the science of familiar things; the work of the world; how we see; how we hear; the heavenly bodies; time and the seasons; the crust of the earth; life upon the earth. The five units in the ninth-grade course in biology are: life in a vacant lot; life in our city parks; life in and about a lake or pond; life on the plains and in the mountains; man in his environment.

FOREIGN LANGUAGE

The status of foreign language in the junior high school. Rodgers's tables, already frequently referred to in reporting the status of certain subjects in junior high schools, disclose also the status of the foreign languages in these new units.² They are sometimes, although far from universally, offered in two-year schools — much less frequently in seventh grade than in eighth grade. When offered they are usually placed in variable portions of the program. They are somewhat more frequently available in the seventh grade of three-year schools operating constants-with-variables programs than in two-year schools, and, as may be expected in view of the traditional place of beginning the study of foreign language, they constitute a frequent offering in the ninth grade. In three-year schools administering differentiated curricula, courses in the

¹ General Science [in] Grades Seven and Eight [and] Biology [in] Grade Nine, Junior High School, Course of Study Monograph No. 2, p. 50. Public Schools of Denver, Colorado, 1924.

² See Chapter V of this book.

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foreign languages are less often listed in commercial and practical-arts curricula than in the academic curriculum. Latin is sometimes prescribed in these academic curricula, but much less often than it is listed with the electives. The languages taught are almost always Latin, French, and Spanish, with somewhat greater frequency for Latin than for the others. Rodgers found Italian in one two-year junior high school, and Marshall reported German and Italian as being sometimes offered.¹

Another measure of the status of foreign language is the proportion of pupils enrolled in them. Gosling, reporting on the status of the foreign languages in a large number of junior high schools in twenty states represented in the North Central Association of Colleges and Secondary Schools, found that the enrollment in foreign language was 5.3 per cent of all pupils in seventh grades, 14.7 per cent of all pupils in eighth grades, and 44.1 per cent of all pupils in ninth grades.² This enrollment was almost exclusively in elective courses in the languages represented, which were, in order of proportions of pupils enrolled in them, Latin, French, Spanish, German, and Italian.

The aims of foreign language. In the investigation just mentioned Gosling inquired into the objectives in the study of foreign language in the junior high school.³ Irrespective of the specific languages concerned, the objectives most often reported in the order of declining frequency are "help in English" (including also "help in English grammar" and "to increase vocabulary"), "cultural,"

¹ H. C. Marshall, "What should be the Nature of Foreign-Language Study in the Junior High School?" in *Educational Research Bulletin* (May 13, 1925), Vol. IV, pp. 210-213.

² Thomas W. Gosling (Chairman), "Foreign Languages in Junior High Schools," *The North Central Association Quarterly* (June, 1926), Vol. I, pp. 106-138.

³ *Ibid.* p. 118.

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"preparation for college," "help in later language study," "commercial," "practical," "disciplinary," "to broaden exploratory field," "to gain speaking knowledge," and "to foster international understanding." Some of these objectives, such as "disciplinary," and "cultural" are cast in discouragingly traditional terms, showing that the attitudes toward the language of the four-year high school are being taken over for junior-high-school work. An objective peculiar to junior-high-school purposes is to be found in the reference to exploratory services, but this is not so frequently proposed as several others.

Objectives in this field as set up in individual school systems may be illustrated by quoting those proposed for French in Denver and for Latin in Baltimore. The course in French provides for "immediate" and "ultimate" aims, the latter being subdivided into "practical" and "cultural" aims.¹ The *immediate* aim is to develop progressive ability to speak, read, and write the language by means of (1) accurate pronunciation, (2) mastery of a practical vocabulary, (3) adequate knowledge of grammatical principles as a tool for comprehension of the language, and (4) interest and enjoyment gained through stories, pictures, games, songs, and dramatics. The *practical* aim of the ultimate group includes development of language sense through (1) increased knowledge of the origin, development, and structure of languages, (2) facility in learning other languages, and (3) better comprehension of English and the ability to use it through the study of the meaning, origin, and growth of words and the knowledge of its inter-relationship with and similarity to other languages. The *cultural* aims are the following:

¹ French [in] Grades Eight, Nine, Ten, Eleven, and Twelve, Junior High School, Course of Study Monograph No. 15, p. 11. Public Schools of Denver, Colorado, 1925.

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1. Increased comprehension, together with a power to interpret and to use some of the facts of the history, life, institutions, art, religion, and politics of the peoples whose language is being studied, thus giving a better understanding of their contributions to the world's progress.

2. Development of appreciation for the traditions, literature, arts, and social institutions of these people.

3. Provision for enjoyment through the increased love of reading and ability to judge ideas and facts.

The formulation for junior-high-school Latin in Baltimore is likewise divided into two groups, the "immediate aims" and the "ultimate objectives."¹ The *immediate* aims include (1) progressive development of power to read Latin, (2) ability to pronounce Latin correctly, (3) acquisition of a selected vocabulary, (4) mastery of essential inflections, (5) ability to comprehend and to illustrate simple rules of syntax by original sentences, and (6) ability to translate easy Latin and also to turn simple English sentences into Latin. The *ultimate* objectives are (1) acquisition of a larger English vocabulary and a more accurate use of English words derived from Latin, (2) better understanding of the fundamentals of English grammar as a foundation for further language study, (3) increased knowledge of facts relating to the life and institutions of the Romans and to their influence on our present civilization, (4) development of the power of careful observation, comparison, analysis, reasoning, judgment, etc., and (5) development of right attitudes toward social situations (patriotism, honor, service, self-sacrifice).

To those conversant with former claims made for foreign language, stressing as they did almost exclusively unacceptable disciplinary concepts, these formulations present a refreshing contrast. The modern educationist

¹ Latin Course of Study for Senior and Junior High Schools, p. 13. Department of Education, City of Baltimore, 1924.

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is much less disposed to remonstrate against them, especially as the items designated as "ultimate" are made objectives definitely to be striven for rather than accepted as values incidentally accruing without conscious effort of pupil and teacher to attain them. On the other hand, it may be said concerning them that, like the objectives reported to Gosling, they smack of objectives proposed for these subjects in senior-high-school grades. Although the aims in this field in junior and senior high schools must have a good deal in common, we may properly inquire whether those cited for the lower unit should not give place to the special guidance services to be rendered by variable subjects in the junior high school. The formulations would be more appropriate if exploratory or "try-out" aspects were made more conspicuous.

The illustration and discussion of aims brings up the whole question of the proper place of foreign language in the junior high school. Study of enrollments in the foreign languages in our high schools shows that they have been rapidly losing ground. There is a growing conviction that the American secondary school has overemphasized this field, and that far too large a proportion of those in attendance from the ninth grade upward have had work in it. This conviction has gained point especially since the educational world has arrived at a more discriminating conception of the theory of general discipline than was formerly prevalent, and has made the accompanying discovery that the knowledge of a foreign language to be gained in a few years of study provides a rather limited area of contact with the ultimate aims of secondary education. The clarification of objectives in each subject, which seems now to be on the way, is likely to be followed by a further decline in the proportion of secondary-school students taking the foreign languages.

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This does not, however, deny a function and a place in the junior high school to some work in foreign language, especially if it is discriminatingly administered. There will perhaps always be those who should have open to them the opportunity for the study of some language other than the mother tongue. The following quotation from Glass's discussion of the place of Latin in the junior high school exemplifies the point of view of those who urge its continuance as an elective subject : ¹

There will always be a group of secondary-school pupils whose intelligence quotients prove that they are capable of profiting from Latin courses, whose education will be incomplete without first-hand knowledge of the Latin origin of their own daily speech and the literature of most of the peoples they will read, and who cannot intelligently interpret present-day social life and modern civilization without intimate knowledge of Roman life and civilization. Latin has too long persisted in the program of studies to be summarily dismissed without a hearing. The mistake has not been that Latin has been a part of the curriculum but that it has been required of countless multitudes of secondary-school pupils who should never have been permitted to take the subject because of ineptitude for Latin, incapacity to master it, or a complete lack for any need of it.

The nature of the junior-high-school offering in foreign language. The student of syllabi for foreign language soon discovers that the predominant practice is to introduce in the first two years of the treatment of a language in the junior high school the equivalent of the content covered in the usual first-year high-school course. For example, the textbooks, readings, and methods in French are ordinarily the same as those used in the first high-school year in

¹ James M. Glass, Curriculum Practices in the Junior High School and Grades V and VI, Supplementary Educational Monograph No. 25, p. 92. The University of Chicago Press, 1924.

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French, the chief difference being that two years instead of one are taken to cover the work. Again, two years are taken, either in the seventh and eighth grades or in the eighth and ninth grades, to do the work outlined in the usual first-year textbook in beginning Latin, the pupil then being assumed to be ready for the customary second-year course in Latin.

This type of practice is predominant chiefly for two reasons, one being that it is the first and easiest method of course-making that suggests itself, and the other that it promises a minimum of problems of articulating junior-high-school courses with those offered in the senior high school. This endeavor to seek equivalence with senior-high-school courses is, however, not without its serious dangers, these arising from the inadaptability of senior-high-school content and methods to the needs of junior-high-school pupils. The grammar-translation method not uncommon in the modern languages may be regarded as unsuited to most pupils in seventh and eighth grades, and much of the reading material as out of reach for them. What is needed is less emphasis on grammar, more on direct conversational use of the language, the latter being accompanied by the reading of a large amount of easy and carefully graded materials. Such junior-high-school courses will, of course, *necessitate the modification of the senior-high-school courses* into which pupils having had the work in junior high schools go.

The problem of adapting the work in Latin to junior-high-school pupils is even greater, for the reason that conventional first-year high-school courses have much more rigidly followed the grammar-translation procedure and that Latin is a dead language to which the direct method is less suited. This should be accepted as one ground why pupils with average general ability or less

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should not be encouraged to elect Latin, especially if the content and method are not radically changed from what is conventional. According to the view taken at earlier points in this book, no consideration of the inappropriateness for college-entrance purposes of the modified emphases either in modern language or in Latin should be permitted to interfere with the adaptation of the courses to children in junior-high-school grades.

Among the efforts that have been made to adapt instruction in Latin to junior-high-school grades are the "translation" method that has been described by Fletcher¹ and the "Introductory Lessons in Latin and English," outlined by Gray.² In the first of these procedures grammatical classifications and terminology are subordinated, the significance of case endings of nouns and the person and tense forms of verbs being developed by means of emphasis on translation and not by means of terminology and definition. As reported, the reading content in junior-high-school grades is drawn from that typical of the first three years of the usual high-school course in Latin.

The nature of the course prepared by Gray may be seen from the following titles of some of the lessons: "The Roman People and the Latin Language"; "The Latin Language as it lives Today"; "How to extend your Knowledge of the Roman People"; "Our Debt to Latin"; "Similarity of English Derivatives"; "How to study Vocabulary"; "Roman Myths and Legends"; "Latin Prefixes in English"; "The Roman House"; "How a Roman spent his Day." The outline also provides lessons in syntax, inflections, the Latin sentence, and prose. Even this incomplete list suggests the endeavor

¹ W. H. Fletcher, "The Translation Method of Teaching Latin," *Journal of Educational Psychology* (January, 1920), Vol. XI, pp. 1-15.

² Mason D. Gray, *Introductory Lessons in Latin and English* (Teachers' Edition). Board of Education, Rochester, New York, 1922.

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to introduce content adapted to achieving aims rather similar to those quoted above as being proposed for Latin in the junior high schools of Baltimore.

The emphasis in such an outline on content significant for training in English directs attention to the offering in some junior high schools of a course in what is called "general language." The content varies from city to city, but it usually includes, among other types of material, treatment of the origin and nature of language, the origin and development of English and its relation to other languages, the grammatical structure of language, some study of etymology for vocabulary enlargement and for demonstrating the composite structure of English words (word analysis), and the like. It is sometimes combined with other elements of language study, like English grammar and composition, to make up the work in this field prescribed for all pupils in seventh and eighth grades. In fact, some of these materials are so important that they may well be made a part of the prescribed course. In addition to the obvious values of such content, such as an appreciation of the importance of language and a better understanding of the meaning of English words, it can be made prognostic of the pupil's ability in language, and thus help him and his advisers in deciding upon the inclusion or exclusion of foreign language in his subsequent study programs.

QUESTIONS AND PROBLEMS

1. How are the "progressive tendencies" in secondary-school English, as listed by Lyman, related to the functions of the junior high school?

2. Examine the course of study in English for some city school system to note the extent of recognition of these "progressive tendencies."

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3. Examine textbooks in geography, American history, and community civics in use in junior-high-school grades from the standpoint of criteria expressed or implicit in the materials of this chapter.

4. Examine some texts in mathematics published for use in junior high schools to note the extent to which the content has been modified from the traditional practice of restricting the work in seventh and eighth grades to arithmetic, and in the ninth grade to algebra.

5. How should limiting the constant work in mathematics in the junior high school to seventh and eighth grades affect the content of the courses in those grades?

6. The consideration of what peculiar functions urges the introduction of courses in general science earlier than the ninth grade?

7. Discuss the advantages and disadvantages of introducing the work in hygiene into the courses in general science or in connection with the work in physical education.

8. It is sometimes argued that Latin is a less appropriate subject of study for junior-high-school grades than are the modern foreign languages. What is to be said on both sides of this question?

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Santa Cruz

VII

THE SUBJECTS OF STUDY (CONTINUED)

THE INDUSTRIAL ARTS

The status of industrial arts in the junior high school. Rodgers, in the three tables reproduced on pages 172-175 and frequently referred to again in the foregoing chapter, shows that the field of industrial arts — reported by him variously as “manual training,” “shop experience,” “mechanical drawing,” “practical arts,” and “agriculture” — is a frequent constituent of junior-high-school programs of study. In two-year junior high schools it is usually required of all boys in both grades in a majority of schools, but is sometimes placed among variable subjects. In three-year junior high schools operating constants-with-variables programs it is required in one form or another in the seventh grade, but is not so frequently prescribed in subsequent grades. It is typically variable in the ninth grade. The practices in schools administering differentiated curricula are not essentially different from those for schools with constants-with-variables programs.

In his description of the industrial arts taught in the fourteen centers represented in his investigation of offerings in junior high schools, Glass¹ lists the following types of content as made available in one or more systems in the seventh grade: applied science, electricity, general shop,

¹ James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, Supplementary Educational Monograph No. 25, pp. 136-140. The University of Chicago Press, 1924.

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household mechanics, manual training with mechanical drawing, mechanical drawing, metal work, option of special shops, and woodwork (manual training). As being given in the eighth grade he lists automobile mechanics, electricity, machine shop, mechanical drawing, sheet-metal work, also option of special shops, printing, and woodwork (manual training).

Summarizing the nature of industrial arts in the junior high school, he says :

Industrial arts in the seventh and eighth years is expanded to include both woodwork and metal work and takes the form of a general shop course, household mechanics, applied science, or an option of several type shops.

There is a continuous and progressive development of the required industrial-arts course through the fifth, sixth, seventh, and eighth years. This progressive development continues into the ninth year in five centers, but is abruptly halted in the other centers by a change to elective subjects.

The objectives of junior-high-school industrial arts. A number of formulations of the objectives of industrial arts in the junior high school have been attempted, both by the statement of individual opinion and through attempts at securing an indication of preference by a number of judges. Of the latter type two may be quoted, one by Carman and the other by Edgerton.

1. *Carman's study.*¹ Carman submitted to a large number of "representative persons" — all in educational work, most of them in work related to the field under consideration — twelve statements of the objectives of industrial arts quoted from as many sources, asking for the indication of preference. The statement found to be preferred

¹ Kenneth V. Carman, "Results of an Inquiry concerning Certain Phases of Junior-High-School Industrial Arts," *Industrial-Arts Magazine* (July, 1922), Vol. XI, pp. 251-256.

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by the largest number of judges was the twelfth in Carman's original list, and was one which had been drawn from the Proceedings of the Eastern Arts Association.

The purpose of the work in these years may be stated as including values for increased practical efficiency and more intelligent citizenship; trying out of vocational-guidance values; and values in concrete experience giving motive for and interest in the subjects related to wider vocational and social interest. . . . To these may be added the specific training values for those who will enter industrial vocations. . . . Here, as in the elementary school, industrial intelligence, insight, and appreciation constitute the largest values, and these should not be subordinated to mere manipulation of tools.

The statement standing second in the ballots read as follows:

The specific purpose of the manual arts is to lay a broad foundation of experience and information that will assist each pupil to interpret the social forces at work in his environment to the end that he may make a wise and intelligent choice of his life work and thus develop into an efficient and loyal citizen.

The contrast of these two composite concepts with an unacceptable formulation may be seen by quoting the statement given the lowest place in the ballots.

The purpose of manual training is mental training through the hand and eye, just as the study of history is mental training through the memory and other powers.

2. *Edgerton's study*.¹ The results of the second study, that by Edgerton, are in interesting accord with those reported by Carman. Edgerton found that the main

¹ A. H. Edgerton, *Industrial Arts and Prevocational Education in Junior High Schools*, p. 16. Bruce Publishing Company, 1922.

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reasons given for offering industrial activities and related studies in 303 intermediate and junior high schools were four in number. (1) The reason most frequently indicated (118 schools) was "contributing to the general experience, all-round development, and industrial intelligence." Subdivisions under this major classification were "understanding and appreciating economic production in some form; gaining respectful attitudes toward the various workers and their work; having ability to judge industrial products and do simple repair and constructive work." (2) The reason given next place (101 schools) was "aiding in the intelligent selection of industrial occupations without encouraging early choices." The subdivisions listed under the second reason were "trying out individual inclinations, interests, and capacities for industrial pursuits through typical experiences; making reliable studies of the conditions, demands, and opportunities in related occupations." (3) Third in order (78 schools) was "enriching the school experience of pupils through concrete situations," the subordinate categories of this reason being "having science, mathematics, and other subjects profit from a better understanding of materials, processes, tools, and machines; providing for the individual needs of pupils who would not remain for academic education alone; helping pupils more wisely to choose future courses in secondary and higher education." (4) Not many schools (only 6 institutions) give the last reason listed, which is "preparing for entrance to industrial vocations," the subordinate objectives of which are "extending the try-out activity to meet the preparatory vocational needs of pupils who find it necessary to leave school with a minimum of preparation; offering greater opportunities for commercial experiences in shop work by coöperating with outside productive plants during the year."

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3. *Snedden's position.*¹ One of the most trenchant criticisms of objectives in industrial arts in junior high schools is that by Snedden. Before entering upon his evaluation Snedden lists eight "fairly distinguishable purposes": (1) the training of "hand and eye" (formal discipline); (2) definite training toward a future vocation (prevocational training); (3) assistance in vocation finding (guidance); (4) utilizers' appreciations; (5) development of "handy-man" and avocational interests, skills, and appreciations; (6) development of economic and other appreciations of major fields of the world's work (civic values); (7) centers of correlation for studies intrinsically abstract; (8) provision of opportunities for developmental experience. Because he believes that every well-arranged curriculum or course in education has a primary purpose — and only one — and because the last purpose in the list is the one to which he concedes greatest importance, it is desirable to quote what Snedden says in support of its fundamental character:²

Every observer is aware that growing boys are keenly interested in the use of tools. To some extent this interest seems almost instinctive. . . . To a large extent, however, these tendencies are conditioned by environmental suggestions so that machine dissembly, machine operation, the use of cutting tools, typesetting, electrical manipulation, and the like, are everywhere sought. Under farm conditions a variety of outlets usually exist for the exercise of the quasi-instinctive tendencies. Urban environment tends to constrict, if not greatly to restrict, expression of these tendencies.

There is every evidence that predispositions to use tools parallel in importance in the development of youth these other

¹ David Snedden, "Industrial Arts in Junior High School: Certain Postulates and Hypotheses," *Teachers College Record* (September, 1925), Vol. XXVII, pp. 26-32.

² *Ibid.* pp. 29-30.

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predispositions to indulge in physical sports, to explore environments, to build up social groups, and to satisfy a large variety of curiosities. All of these are well recognized as phases of natural growth, and, although the fact is not yet capable of demonstration, it is fairly certain that deprivation of reasonable opportunities for exercise of any of these varieties of experience-getting leads to some kind of distortion of growing body, mind, or spirit.

This purpose of developmental experience being in Snedden's mind the primary one for urban boys from twelve to fifteen years of age, other objectives seem to him subordinate. For such boys, prevocational training (as he defines it) "can be realized for a few"; occasionally negative or positive guidance values can accrue; "in all cases some few utilizers' appreciations can be developed"; in a considerable number of instances "handy-man" powers are trainable; "once in a thousand times, social insights of an important degree are practicable; and almost never can useful centers of correlation be developed." For rural boys he contends for two major types of offerings, the first to be dominated by prevocational or "handy-man" considerations, and the second (embracing printing, photography, machine-shop practice, etc.) by developmental considerations.

Snedden's views on this subject are deserving of serious attention. Probably one of their beneficial results will be their sobering effect on the tendency to anticipate the accrual of large incidental values without definitely mapping out courses and curricula so as to achieve them. Perhaps *their main defect lies in their too emphatic a postulation of a single chief objective*. It does not seem impossible to have courses in this field adapted to the attainment of more than one objective, especially when means and methods of achieving them are often almost identical.

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4. *The St. Cloud formulation.* Although a final answer on the issues here raised must await experimental or other scientific evaluation, the feasibility of multiple-purpose courses on the junior-high-school level becomes more nearly apparent when one examines syllabi carefully planned in the light of such a formulation of objectives of courses in this field. Such syllabi have been prepared for junior-high-school grades in St. Cloud, Minnesota, and will be referred to again below.¹ Our present interest is in the "specific aims" of these courses, which coincide to a generous extent, even if not completely, with the list of possible purposes already quoted from Snedden.²

THREE COMMONLY ACCEPTED AIMS

1. To provide opportunities for boys to make and do the things they like to do.
2. To give training in the common usable skills everyone should possess.
3. To provide technical exploratory or try-out experiences in the shops representing typical industrial occupations, in order to help boys determine whether they possess general mechanical aptitudes or possibly some special one.

FIVE SPECIFIC ADDITIONAL AIMS

4. To give related or industrial-art training, in order to develop an appreciation of art as applied to industry and to develop intelligent, discriminating consumers of industrial products.
5. To give information about occupations represented in various shops, and other occupations closely allied with them.

¹ John F. Friese and Others, *Manual Arts in the Junior High School*. Board of Education, St. Cloud, Minnesota, 1925.

² David Snedden, "Industrial Arts in Junior High School: Certain Postulates and Hypotheses," *Teachers College Record* (September, 1925), Vol. XXVII, p. 7.

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6. To provide educational guidance, in which occupations study forms a background. . . .

7. To give an insight into present-day industrial problems of a social and economic nature faced by capital, labor, and the general public.

8. To give training in problem solving as opposed to . . . copying models and blindly following directions.

The nature of the offering. It may be judged that whether a composite formulation of objectives like that just quoted or a single-concept formulation like that urged by Snedden is accepted, it is desirable to offer a rather wide range of contact with the field of industrial arts, rather than to restrict the work, as is sometimes done, to bench work in wood only. The tendency to a widened range is shown in the citations made near the opening of the chapter from Glass's description of the offerings in industrial arts in fourteen centers. Edgerton has shown a similar tendency in a larger number of schools.¹ In the large majority of cases the number of "activities" made available in intermediate schools or junior high schools ranged from three to ten, among the activities listed being printing, carpentry, cabinetmaking and furniture-making, wood-finishing, pattern-making, foundry work, forging, work in machine shop, in sheet metal, and in concrete, photography, electrical work, plumbing and pipe-fitting, automobile operation and repair, drafting, and the like. A less number than three of these is often given in the schools of smaller communities, but Edgerton found schools at the other extreme listing as many as sixteen.

Even this list does not suggest the full scope of occupational employments with which pupils who engage in the activities represented may, under proper teaching condi-

¹ A. H. Edgerton, *Industrial Arts and Prevocational Education in Junior High Schools*, pp. 15-18. Bruce Publishing Company, 1922.

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tions, make contact. The extent to which the exploratory, social, and other values may be extended is made more apparent in the following quotation from an article in which Wilson discussed the possibilities of industrial arts in the junior high school : ¹

Printing should include an investigation of composing, press-work, binding, engraving, and lithographing ; *woodworking*, of bench woodworking, carpentry, machine woodworking, cabinet and furniture making, varnishing, painting, finishing and upholstery ; *painting and decorating*, of wood finishing, interior finishing (floors, trim, ceilings, walls), exterior work (house painting), automobile finishing, sign and scene painting ; *concrete*, of footing and foundation walls, sidewalks, curbs and gutters, troughs, posts, steps, boxes, culverts, roads and engineering work ; *brickwork*, of walls and corners, manholes, foundations, panels, piers, semicircular arches, chimneys, and fireplaces ; *metal working*, of blacksmithing, machining, tool making, pattern making and founding, structural steel work, sheet-metal and automobile work ; *drafting*, of the work of the draftsman and designer, engineering drawing, machine work, and architecture utilizing orthographic projection, dimensioning, and lettering, drawing to scale, titles, bills of material, notes and specifications, penciling, tracing, inking, and blue-printing, isometric and cabinet drawing, and perspective or pictorial drawing, details and assembly drawings, plans and elevations, sheet-metal drafting, involving intersections ; *industrial art*, of textiles, wall paper, jewelry, ceramics, furniture, architecture, machinery, illustration involving freehand and mechanical rendering, pencil, charcoal, crayon, pen and ink, water color, oil color ; *electrical work*, of related elementary science, signal wiring, maintenance, storage battery work, automobile work, light, heat, and power work including general station work, switchboard operation, line construction, meter work, telephone and electric street-railway work, and electrical manufacturing ; *textiles and clothing*, of carding, spinning,

¹ Leon L. Wilson, "An Industrial-Arts Program for the Junior High School," *School and Society* (January 28, 1922), Vol. XV, pp. 95-99.

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weaving, tests for wool, cotton, linen, silk, bleaching and dyeing, printing, and tailoring; *baking*, of bread and biscuits, cakes, pies, crackers, candies, etc.; *automobile mechanics*, of two-cycle and four-cycle gasoline engines, elements of ignition, and lighting systems for automobile gasoline engines, for trucks, and pleasure cars, chassis, frame, axles, wheels, steering gear, transmission, and brakes.

It is manifestly impossible to provide in any junior-high-school course actual experiences in such a long list of activities and employments as that just quoted. Manipulative experiences must be an element of the work, to be sure, but these must be supplemented by readings, excursions, reports by pupils, lectures, and demonstrations. This is in line with recommendations being made for the improvement of industrial arts in junior-high-school grades.

An example of the new emphases in organization and content is provided in the work in manual arts as carried forward in these grades in St. Cloud, Minnesota, the aims of which have already been quoted. The work begins in the seventh grade with six exploratory courses each extending through six weeks. These six units bear the following titles: "Exploratory Mechanical and Architectural Drawing Course," "Exploratory Woodwork Course," "Exploratory Electricity Course," "Exploratory Automotive Course," "Exploratory Printing Course," and "Exploratory Machine Shop and General Metal-Work Course." These six units are required of all seventh-grade boys, the instruction extending over one sixty-minute period daily throughout the year.

The nature of these exploratory units may be illustrated by reference to the content and organization of the automotive course. The specific aims of this unit¹ are (1) to

¹ Manual Arts in the Junior High School, p. 91. Board of Education, St. Cloud, Minnesota, 1925.

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give an insight into what automotive work includes, (2) to give occupational studies centered in the automotive industry, (3) to become acquainted with some of the common tools in automotive work, (4) to help the boys determine whether they wish to take up automotive work in the advanced courses, (5) to give a knowledge of how to lubricate and keep a motor and an automobile in good condition generally, and (6) to develop an appreciation of art as it is applied to the automotive industry, and to develop intelligent buyers of cars. Among typical problems or "jobs"¹ are cleaning, lubricating, and tightening different types of springs; adjusting, aligning, and lubricating wheels; study of the construction of different types of rear axles; study of the gas engine through cleaning carbon, grinding valves, and cleaning the oiling system; lubricating the chassis; repairing a puncture in a tube; teaching the proper use of the valve-spring remover, valve-grinding tools, speed wrenches, emery wheel, wire-brush wheel, and center punch for numbering valves. Besides work on these jobs there is the study of automotive trades as occupations; technical information about the characteristics of iron, steel, and alloys, and information about common tools and how to select them; related science; safety instruction pertaining to oil-soaked and gasoline-soaked waste, shellac near fire or flame, switches, use of screens or glasses when grinding or cleaning parts on the wire wheel, running a motor with shop windows closed, etc.; social and economic problems; and art correlations including, among others, consideration of automotive body design, color harmony, and automobile finishing, and some color theory.

This year of work in exploratory units is followed by six half-year courses bearing the names "Machine Shop,"

¹ Ibid. pp. 92-93.

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"Woodwork," "Electricity," "Automotive," "Printing," and "Mechanical Drawing." These courses are elective, the boy selecting them in some part on the basis of contacts and experiences obtained in the seventh grade.

This arrangement of work may turn out to embody objectionable features. It may be that some of the exploratory units are too short, or that the content in some of them may be too extended to be compassed in the period of six weeks. Moreover, even if experience proves that the arrangement is satisfactory for St. Cloud, there is no assurance that it is acceptable for all other junior high schools. Nevertheless its superiority to the conventional offering restricted to bench work in wood and to manipulative experiences seems indubitable.

Nothing has so far been said in this section concerning the offering in agriculture. It should find place in some form in junior-high-school grades in small communities. The course in general agriculture, including some study of farm crops, animal husbandry, dairying, soils, horticulture, farm mechanics, and farm management, may be postponed to the eighth grade. It may be preceded in the seventh grade, accompanied in the eighth, or followed in the ninth by gardening or home projects along many lines. In agricultural communities it may well be followed in the ninth grade by some specialization in the field reflecting the needs of the community. There should also be some recognition of the field, either as gardening or as general agriculture, in many urban junior high schools.

HOME ECONOMICS

The status of home economics in junior high schools. The tables drawn from Rodgers show "domestic science" to have practically the same place in junior-high-school

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programs of studies, as to frequency of being offered, prescribed, or made elective, as does manual training.¹ If there is any difference, it is in the direction of being offered or prescribed with somewhat, but not strikingly, greater frequency than is manual arts. The tables referred to do not show the amount of time per week devoted to the subject. Glass, reporting on this for the fourteen centers represented in his study,² showed the average number of minutes for the seventh, eighth, and ninth grades to be, respectively, 180.0, 131.3, and 283.3. The variation from school to school in this group was wide, ranging in the seventh grade from 60 to 300 minutes, in the eighth grade from 52 to 200 minutes, and in the ninth grade from 120 to 550 minutes. The averages are higher than for an unselected group of junior high schools and much higher than for seventh and eighth grades of the older (8-4) organization.

Aims of home economics. The Committee on Home Economics working with the Commission on the Reorganization of Secondary Education did not see fit to set up any special purposes of home economics in the junior high school. In fact, it did not differentiate with respect to purposes between the aims for elementary schools and for high schools. It proposed that the aims of general home economics on both these levels should be two:³

First: To prepare the pupils for helpful and worthy membership in their present homes by establishing such standards of character as will result in consideration of the comfort and convenience of others and in willing service for the common

¹ See Chapter V of this book.

² James M. Glass, Curriculum Practices in the Junior High School and Grades V and VI, Supplementary Educational Monograph No. 25, p. 26. The University of Chicago Press, 1925.

³ Reorganization of Home Economics in Secondary Schools, *United States Bureau of Education Bulletin No. 5* (1922), p. 4.

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good. To accomplish this aim it is necessary to develop skill in the use of household materials, utensils, and machinery; to inculcate such personal habits and standards as to foods, clothing, and surroundings as will insure good physical health; to train in thrift, economy, and business methods that the pupil may appreciate the problems confronting the administrator of the family income; to apply to daily life the fundamental laws of beauty of color, line, and form.

Second: To give prevocational training to such girls as may discover within themselves special ability for those occupations and industries that have evolved from the household crafts.

Since it is based on the combined investigations of the activities of pupils and the opinions of parents, it seems advisable to quote here also the formulation of the objective of home economics adopted for Denver.¹ The conclusion was reached by the committee in charge that the main function of home economics was to contribute to worthy home membership. The following elements were recognized as contributing to this main function:

1. Proper health habits and attitudes.
2. Right attitudes toward home and family life together with (a) a working knowledge of the processes carried on in the home, (b) a degree of skill commensurate with the present needs and age of the individual.
3. Recognition of the importance of the family group in society.
4. The ability to save and spend the family income or individual earnings efficiently and intelligently.
5. Ability and inclination to participate in a variety of unspecialized, enjoyable, and fruitful spare-time activities.

Both these formulations of objectives of home economics, except the second aim in that proposed by the Committee

¹ Home Economics [in the] Junior High School, Grades Seven, Eight, and Nine, Course of Study Monograph No. 12, p. 9. Public Schools of Denver, Colorado, 1925.

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on Home Economics of the Commission on the Reorganization of Secondary Education, are general in character; that is, they are not peculiarly significant in the junior-high-school period. To have a subject contribute to general aims in this way is without question appropriate and must, of course, be insisted upon. But a subject must at the same time contribute to the achievement of the purposes distinctive of the educational unit in which it is taught. In the junior high school this means among other things that home economics must be helpful in exploration and guidance. This purpose is recognized in the second aim of the Committee on Home Economics.

One writer in the field of home economics has recently emphasized this dual service of the subject in the junior-high-school period, that is, the contribution to values both in general education and in guidance.¹ After referring to the junior high school as a transitional or "pivotal" unit, she points out that the "big objectives" of education in the junior high school are no different from those of other units in the system and discusses the relationship of home economics to "cardinal principles," seeing values in it for health (especially as to nutrition, personal hygiene, home sanitation, and clothing), good citizenship, worthy home membership, and worthy use of leisure. Proceeding to the more peculiar service of the junior high schools, she has the following to say:²

Another outstanding objective recognized by all leaders in junior-high-school education is that of providing prevocational opportunities. In order that vocational efficiency may be developed through later training, it is advocated that many diversified opportunities in the junior high school will provide

¹ Frances Zuill, "Objectives in Home Economics for the Seventh, Eighth, and Ninth Grades," *Journal of Home Economics* (March, 1924), Vol. XVI, pp. 107-112.

² *Ibid.* pp. 111-112.

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a means for children intelligently to select the kind of work for which their abilities and inclinations have shown them to be best adapted. Many such opportunities are provided for boys. . . . In nearly all schools home economics, in its several phases, is the only prevocational subject offered to girls. Even where the school furnishes adequate space and equipment which approaches real home conditions, and instruction and practice are given in all phases of the home-making activities . . . it is fair to ask whether or not this prevocational [or guidance?] objective is fully attainable. When, as sometimes happens, the activities for girls stop in cookery or the clothing laboratory this objective is certainly not attained. There is need for progress here.

It may be said, in conclusion, on this guidance function that the contact with a wide range of content in home economics in these grades is desirable that girls "may discover within themselves special ability for those occupations and industries that have evolved from the household crafts," as stated by the Committee on Home Economics. This need may be promptly conceded, from the analogy offered by a similar service of industrial arts for boys. But these wide contacts are even more desirable in order to give the girl some conception of the generous scope of home economics as a field of study. To restrict the work in early junior-high-school grades to cooking or sewing is to fail to give any adequate conception of the significant ramifications of the entire subject and to give an intelligent basis for the selection of further courses in the field.

The junior-high-school offering proposed by the Committee on Home Economics. With this material before us we are in a position to consider the course in home economics proposed by the Committee on Home Economics. The recommendations of the committee are for courses to be required of all girls throughout the junior-high-

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school cycle and to be made elective in the senior high school. The work outlined for the junior high school is as follows:¹

SEVENTH GRADE

First quarter: the care of clothing; thrift in selection and making

Second and third quarters: meal preparation and service

Fourth quarter: choice and making of simple clothing

EIGHTH GRADE

First and second quarters: food preservation, marketing, food study, food accounts

Third quarter: economy in the use of clothing; study of costs

Fourth quarter: (1) summer clothing — its use and care;
(2) garments for infants; home nursing, and care of little children during summer

NINTH GRADE (*Survey Course*)

First quarter: clothing studies in relation to healthful and economic living

Second quarter: food studies in relation to healthful and economic living

Third quarter: the home and its care; studies dealing with making the living place a healthful, attractive home wherever it may be

Fourth quarter: family and personal finances; wise and thoughtful spending and saving

Although this arrangement has a good deal to commend it, certain questions may be raised as to its complete acceptability for the purposes of the junior high school. One question pertains to requiring home economics in large amounts of all girls throughout the full three-year period. This proposal is sometimes objected to and, as has

¹ Reorganization of Home Economics in Secondary Schools, *United States Bureau of Education Bulletin No. 5* (1922), pp. 13-20.

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already been reported above, few schools carry this recommendation out in practice. The prescription when made usually extends through the seventh and eighth grades only. A second question refers to too great attention to clothing and food, and to the partial exclusion of other significant phases of all that constitutes home-making, especially during the first two years of the program. To be sure, the content is not suggested in quite such bald terms as "cooking" and "sewing" merely, and the eighth-grade outline adds for the fourth quarter some consideration of home nursing and child care. But the major emphasis throughout the first two years is restricted to food and clothing.

This leads to what may be ventured as the chief derogatory feature of the outline *from the standpoint of junior-high-school functioning*. *This is the introduction of the survey course in the last year rather than in earlier years of the junior-high-school cycle*. In accordance with what was said concerning the special purposes of home economics in the junior high school, this proposal *reverses the proper order, which should be from general to special instead of from special to general*. In support of this criticism we have the analogy in industrial arts in the junior high school (for example in St. Cloud, Minnesota, as described in discussing the first subject group in this chapter), in which the endeavor is to give a wide variety of contacts during earlier courses and to open up to election in later grades the more extended and more intensive treatments of the special fields. Although the analogy is not a perfect one, it possesses sufficient merit to be recognized in planning courses in this field.

In partial extenuation of placing the survey course in the ninth grade it may be urged that it was recommended so as to provide an offering adaptable to unreorganized as

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well as reorganized systems: in the former, especially where the amount of work in home economics given in seventh and eighth grades is traditionally small, it is desirable to have the first course in the four-year high school a general, or survey, course. As reorganization makes headway this argument is decreasingly acceptable. It is high time that this respect for the conventional organization be no longer allowed to retard curriculum reorganization adapted to the needs of the new school.

There need be no misgiving that the field of home economics is naturally so circumscribed as to preclude mapping out and administering such a composite course in early junior-high-school grades. As concerns home activities alone it already ranges through such subdivisions as cooking, canning, dietaries, meal-serving, marketing, laundering, fuels, home management, sanitation, home nursing, child care, child nutrition and diet, costs, budgeting and home business, sewing, handwork in wide variety, textiles, design as related to handwork, clothing, and house decoration, millinery, garment-making, cleaning, and dyeing. Turning to occupations that have evolved out of the household crafts, of the existence and nature of which girls should be made cognizant for guidance purposes, one finds, among others, trade dressmaking, trade millinery, commercial interior decoration, catering, hotel management, management of lunchroom, of cafeteria, and of tea-room, nursing, dietetics, social work, home-economics teaching, dry cleaning and dyeing, housework, and the like. Moreover, the scope of the field, both for wage-earning and non-wage-earning occupations, is rapidly enlarging. On the other hand, on account of these very ramifications there may be those who will contend that girls in the seventh and eighth grades are too immature to undertake such a survey course. To these it may be said that this

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obstacle can hardly be so great for girls in home economics as for boys in industrial arts, since girls by the opening of the seventh grade have a broader basis of experience in the home for understanding and appreciating the course in home economics than boys have for the work in industrial arts.

Where as much as an hour per day is available for the work, it should be possible to compass such a composite survey course during one school year — the seventh grade. Where less time is given to the work, it may be necessary to extend it over a year and a half or two years. The work could then be followed by elective and variable courses dealing more intensively with specialized aspects of the field. Having been preceded by the composite course, subsequent courses both in junior and senior high-school periods could be more intelligently selected.

COMMERCIAL SUBJECTS

The status of commercial subjects in junior high schools. Referring once more to Rodgers's tabulation of the frequency of appearance of the different courses and subjects in junior-high-school programs of studies¹ we find that the only commercial subjects (not including penmanship) offered in two-year schools were bookkeeping and type-writing. In the schools offering them, they were listed in the eighth grade almost always as variables. The only additional subject found in three-year schools administering constants-with-variables programs is "stenography" which, unlike the two subjects already named, was in no school listed for the seventh grade. Stenography did not occur in Rodgers's tabulations for three-year schools administering differentiated curricula, but a course in "business practices" was occasionally found. In this type of

¹ Reproduced as Tables XVII, XVIII, and XIX in this book.

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program the courses in this subject and in bookkeeping and typewriting were usually found in the commercial curriculum, but without a definite predominance either as required or elective subjects. Rodgers does not indicate whether the "arithmetic" which he reported was sometimes listed as "commercial" arithmetic, but the fact that he shows arithmetic to have been more frequently prescribed in the ninth grade of commercial curricula than in others encourages the belief that it is not an uncommon part of the offering in the division of business subjects. A general conclusion from this description of the commercial offering is that it adheres rather closely to courses bearing the same name as those most frequently offered in the earlier years of the four-year high school. They may usually be assumed to be more or less awkward adaptations of courses formerly taught in more advanced grades.

Rodgers found penmanship a rather common offering. When taught — which was, considering all junior high schools represented, much more often in seventh grade than in eighth grade, and much more often in eighth than in ninth — it was usually among the required subjects. The most frequent exception was in commercial curricula in schools administering programs with differentiated curricula. In these curricula penmanship is much more often listed in the ninth grade than in the same grade of other curricula or of other three-year junior high schools, and is more often elective than required in this grade. It should not be assumed that when given in the seventh or eighth grades it is often considered a commercial subject. This interpretation could only be made for the offering in the ninth grade. However, in the light of data to be subsequently summarized, penmanship in the junior high school is properly a commercial subject.

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Among the courses not named by Rodgers which were found by Glass in his examination of programs in the centers represented in his investigation are commercial geography, "elements of business," "first lessons in business," and office practice.

Objectives of commercial work in the junior high school.
A formulation of aims of commercial work which takes cognizance of the special services to be rendered by the junior high school is that proposed in Denver.¹

1. To aid the pupil to discover and begin to develop his ability along commercial lines.

2. To give the pupil who may leave school early, basic training which will be of service to him in whatever line he may find himself located.

3. To give introductory vocational training in so far as possible for those commercial occupations which surveys show are entered by boys and girls who leave school during junior-high-school years.

4. To make future commercial education more vital and meaningful regardless of the length of time it may be pursued.

In order to adapt the training to achieving the third objective a study was made of the commercial positions held by pupils who had dropped out of the Denver schools during the seventh, eighth, and ninth years. Instead of reporting the findings of this study, it is preferable to draw upon the results of an investigation along rather similar lines fostered by the Federal Board for Vocational Education and representing a number of cities rather than one only.² The sixteen cities were distributed to eleven different states located in all sections of the country but the Southeast, and ranging in population (1920) from

¹ Commerce [in] Grades Seven, Eight, and Nine, Junior High School, Course of Study Monograph No. 6, Public Schools of Denver, Colorado, 1924.

² Survey of Junior Commercial Occupations, *Bulletin No. 54*, Federal Board for Vocational Education, June, 1920.

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approximately 12,000 to something more than 750,000. The eighteen occupations found to be most often held by pupils fourteen to seventeen years of age, inclusive, are

TABLE XXVIII. DISTRIBUTION BY AGE, SEX, AND TOTAL NUMBER OF THOSE HOLDING CERTAIN DOMINANT "JUNIOR COMMERCIAL OCCUPATIONS"¹

POSITIONS	AGE				SEX		TOTALS
	Four-teen	Fif-teen	Six-teen	Seven-teen	Boys	Girls	
1. Messenger	126	261	297	169	691	162	853
2. General clerk	29	90	124	162	236	169	405
3. Salesman (retail)	28	53	112	142	139	196	335
4. File clerk	6	36	79	92	94	119	213
5. Bundle-wrapper	10	46	72	65	53	140	193
6. Switchboard-operator		12	69	112	5	188	193
7. Stock clerk	5	53	52	68	128	50	178
8. Mail clerk	6	26	43	44	81	38	119
9. Delivery-wagon driver	14	26	36	22	98		98
10. Stenographer		9	25	54	8	80	88
11. Cashier	3	15	18	24	8	52	60
12. Typist		5	15	36	4	52	56
13. Shipping clerk	4	7	18	26	42	13	55
14. Bookkeeper		1	9	28	11	27	38
15. Billing clerk		3	12	14	11	18	29
16. Calculating-machine operator	2	5	5	15	9	18	27
17. Duplicating-machine operator	1	3	8	10	13	9	22
18. Miscellaneous-machine operator		3	5	12	2	18	20
19. Miscellaneous	54	62	64	60	158	82	240
<i>Total</i>	288	716	1063	1155	1791	1431	3222

listed in Table XXVIII in the order of their frequency of appearance. The table shows also the distribution of young people to these occupations both by age and by sex.

¹ Adapted from the table on page 30 in "Survey of Junior Commercial Occupations," *Bulletin No. 54*, Federal Board for Vocational Education (June, 1920).

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One significant conclusion to be drawn from the distribution is that few commercial occupations are open to fourteen-year-olds, but the number employed increases rapidly from this age upward. A second refers to differences for the two sexes, boys much more often than girls being messengers, stock clerks, mail clerks, shipping clerks, etc., and girls much more often than boys being bundle-wrappers, switchboard-operators, cashiers, typists, and bookkeepers. In still other occupations, for example, general clerks, retail salesmen, and file clerks, the proportions are more nearly equal. A much more significant conclusion arises from a comparison of this distribution with the courses shown by Rodgers to be most frequently offered in junior high schools, namely, bookkeeping, typewriting, and stenography. The distribution shows positions in these lines infrequently open to youth of these ages, and much less often to those who are fourteen, fifteen, and sixteen years of age than to those who are older. Data of this sort point to emphasis on a very different type of offering, an offering better suited to preparation for simple and general clerical positions. This can be accomplished by courses usually much more general in character — courses which make contact with a wider variety of business content and experience. Such courses would simultaneously contribute to the achievement of the first and second objectives in the Denver list quoted above.

Suitable courses for junior-high-school grades. A course sometimes proposed as suited to rendering the service required in junior-high-school grades is what is referred to as "junior business training." As outlined and also as it has found its expression in textbook form, it is made up of two main parts, the first aiming to include the more general aspects pertinent for all pupils irrespective of

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occupational destination, and the second aiming to give some knowledge and skill in the junior occupations found to recur frequently in findings of surveys like those cited. As proposed the course also discusses vocational opportunities in business, and the qualities and training necessary for success in them.

Content suitable for the first part would have to do with such matters as savings, investments, insurance, banks, business forms, use of directories and other sources of information, telephone, telegraph, sending money and packages, travel, and simple business law. This type of content is regarded as so valuable that the first part of the course is recommended for a place with the constant subjects. However, the list contains many items that are often included in other courses, and properly so. Thus, the treatment of banks, savings, investments, insurance, business forms, and the like are regarded as appropriate content in arithmetic; the telephone and telegraph have their place in the work in language; travel should come in for attention in geography. If they are not so distributed, there is good ground for introducing this work as one of the constant subjects.

Among occupations proposed to be dealt with in the second part of this course in junior business training are those of messenger, file clerk, mail clerk, cashier, receiving clerk, stock clerk, billing clerk, and shipping clerk.

Of the courses reported by Rodgers as often taught in junior high schools, typewriting may be assumed to have so frequent a relationship to efficiency in the list of junior commercial occupations that it may without question be conceded a place in these grades of the new organization of secondary education. This place has the further justification of its general and exploratory, or try-out, values. Bookkeeping and shorthand, while not, as already indi-

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cated, justified as a frequent offering on grounds of preparation for junior business occupations, participate likewise in the exploratory value. The danger to be warded off is that pupils and parents may come to assume that, when offered in junior high schools, they are taught with intent to prepare adequately for bookkeeping and stenographic positions. This danger can be minimized by restricting the courses and the amount of training offered in them to try-out proportions and frankly acknowledging the inadequacy to occupational needs of the training offered.

Handwriting. At the time of dealing with English in the foregoing chapter it was stated that the subject of penmanship would be treated in connection with the discussion of the commercial offering. The reason for thus grouping handwriting in junior-high-school grades with the commercial subjects will now be made apparent.¹

The need for handwriting may be thought of as falling under two main heads: (1) the purely *social* need, the most exacting phase of which is perhaps in *social correspondence*, and (2) the *vocational* need. The scores on the Ayres scale of specimens of social correspondence written by 1053 adults selected from the standpoint of their interest in education were found to distribute as shown in Fig. 21. The largest single number of these specimens was found to be of the quality 50 on the scale, and the two next largest numbers were at 40 and 60. Computation shows that *only 142 specimens, or 13.5 per cent, were better than 60 on the*

¹ The treatment here is based on data reported by the present writer in an article on "The Determination of Ultimate Standards of Quality in Handwriting for the Public Schools," appearing in the *Elementary School Journal* (February, 1918), Vol. XVIII, pp. 423-446. Another investigation setting up standards of quality, but for commercial occupations only, is that reported by John G. Kirk in the *Journal of Educational Research* (March and April, 1926), Vol. XIII, pp. 181-188 and pp. 259-272.

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scale. When recourse was taken in the study to the opinions of a large number of judges as to what quality of writing is adequate for social correspondence, the results of tabulating these judgments were as shown in Fig. 22. Fully three fifths of the judges regarded the quality

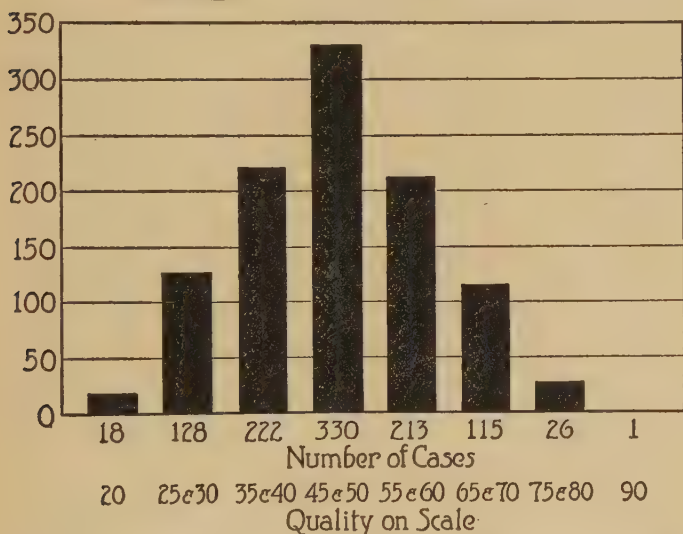


FIG. 21. Distribution of the scores of handwriting of 1053 specimens of social correspondence

50 as adequate, and more than four fifths regarded the quality 60 as adequate for the purpose being considered.

In the light of such facts, *it is difficult to see why, for the use under consideration, a pupil should spend the time necessary to learn to write better than the quality 60. There is even considerable justification for setting the ultimate standard at 50.* Other writers, one of whom is no less an authority in the field of handwriting than Freeman, conclude from these and related data that the latter quality is satisfac-

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tory.¹ As this demand touches every member of society, all the children in the schools should be required to attain the standard set.

As far as vocational needs for ability in handwriting were ascertained in the study being drawn upon, the only

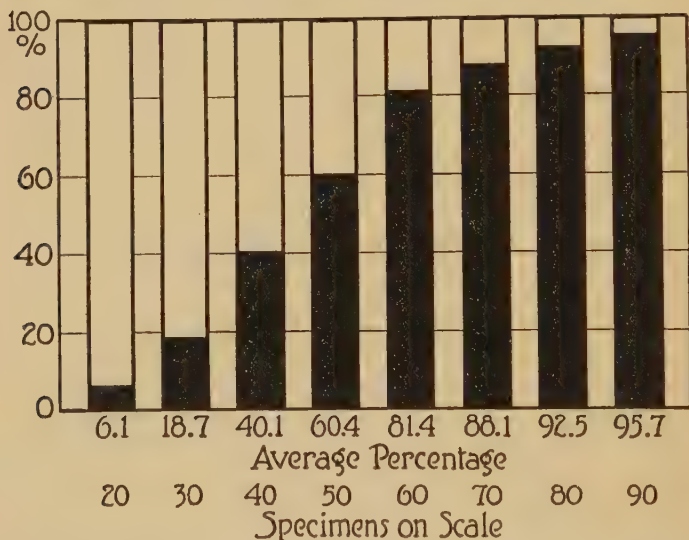


FIG. 22. Average percentages given by 824 judges in considering the three specimens of each quality on the Ayres Measuring Scale for Adult Handwriting adequate for social correspondence

occupations which appear to demand a quality better than 60 are elementary-school teaching, telegraphy, and a large number of commercial employments. The first two of these groups do not constitute sufficiently large proportions of any junior-high-school pupil body, even if those who will enter them could thus early be determined, to call for any

¹ Frank N. Freeman, "Handwriting," Third Yearbook of the Department of Superintendence (1925), chap. vi, pp. 205-216.

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special consideration in setting up handwriting standards for these grades. The case is, however, different for commercial pursuits, because larger proportions of the total population, and therefore of any junior-high-school pupil

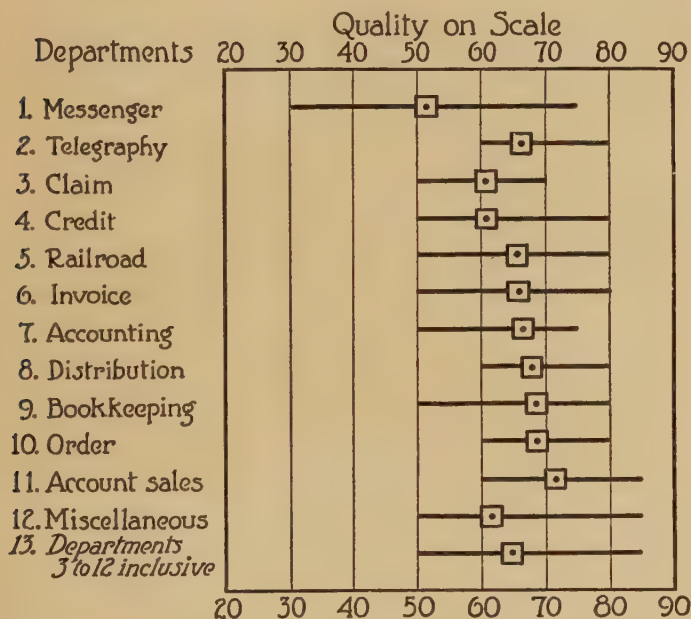


FIG. 23. Ranges and averages of the scores of handwriting done by employees in the offices of two packing companies. (The length of the line represents the range, and the squares locate the averages)

body, will sooner or later enter them. How well those employed in commercial pursuits write is disclosed in Fig. 23, which shows the range of quality of handwriting written by those employed in the offices of two large packing companies in Chicago. It may be seen that, considering only the departments other than messenger and telegraphy, *no employee wrote a quality lower than 50, and the averages of*

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the scores in all but a single department ranged somewhere between 60 and 70. It seems fair to conclude that for those entering commercial employments the attainment of a quality of 70 would be satisfactory. The attainment of a quality in excess of that set to be attained by all (for such a need as social correspondence) appears, therefore, to be in the nature of a special requirement, only for those who are looking forward to entrance upon some commercial pursuit.

What this means for the junior high school becomes apparent as soon as one recalls that by effective teaching of handwriting in the elementary school all or nearly all pupils can be brought up to a quality of 60 by the end of the sixth grade. In systems where the elementary schools discharge their duties in this regard — which should shortly include all systems — the junior high school needs only (1) to make sure that its pupils not planning to enter business maintain in their written work the standard set for all and (2) to increase where necessary up to 70 the quality written by those looking forward to a commercial occupation. For some of these it will be necessary to provide some special instruction in penmanship. Where conditions of efficiency in elementary-school instruction in handwriting prevail as they should, it is unnecessary to make it a part of the constant or "core" work in the junior high school. It is in this sense that handwriting is dealt with under the general head of commercial subjects rather than as a phase of the training in English.

In systems in which elementary-school instruction does not yet bring all pupils who complete the sixth grade up to the minimum quality set — 50 or 60 — it will be necessary for junior high schools to retain handwriting as a constant element of training, removing it as soon as the lower school rises to its responsibilities.

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MUSIC

Status of music in junior high schools. Rodgers reports music as a rather common requirement in both grades of two-year junior high schools, and for at least the first two grades of the three-year schools administering constants-with-variables programs of studies.¹ It is sometimes, however, made a variable in these grades. In the ninth grade it is much less frequently prescribed than in the preceding grades, and is made a variable almost as often as it is required. In three-year schools administering differentiated curricula it is usually prescribed in all three grades, seldom being listed with the electives.

Glass shows, for the fourteen centers represented in his study, that the average numbers of minutes devoted to music in the three grades are respectively 70.0, 67.6, and 73.4, the range being from 45 minutes to about 100 minutes.² This investigator also reports on the "emphasized features" of the required courses in music, which he found to be, roughly in the order of their frequency of appearance in seventh and eighth grades, sight reading, song-singing, interpretation, voice management, elementary theory, and appreciation.³ In the ninth grade there is much less emphasis on sight reading, which is in accordance with the shift from sight reading in elementary-school grades to chorus singing in high-school grades in systems organized on the conventional (8-4) plan. The work referred to does not include the elective offerings to be found in one or more centers, such as band, orchestra, boys' and

¹ These interpretations of the status of music are made from Tables XVII, XVIII, and XIX in this book.

² James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, Supplementary Educational Monograph No. 25, p. 26. The University of Chicago Press, 1924.

³ *Ibid.* p. 147.

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girls' glee clubs, chorus, music appreciation, harmony, and instrumental instruction.

The aims and values of music in the junior high school. The Committee on Music of the Commission on the Reorganization of Secondary Education proposed four chief values for the subject: (1) its æsthetic value, recognizing emotional aspects of our nature which our schools, being concerned too exclusively with intellectual interests, are prone to ignore; (2) its value as a socializing force; (3) its value in the worthy use of leisure; and (4) its value as a vocational subject.¹ The only point on which those who are considering the place of music in the junior high school would be likely to take issue is with respect to the last value listed. After they have made sure that music in the junior high school is serving the first three ends named, their preference would be to have it serve exploratory or guidance purposes rather than to have it conceived of and administered as vocational content. Should it turn out to serve as occupational preparation after having been taken for the other purposes, inclusive of try-out, there can be no serious objection. But to be definitely planned for its occupational bearing would be objectionable.

A recent report of the National Research Council of Music Education on music in the junior high school stresses the peculiar appropriateness of the subject for pupils of the ages concerned. One reason for this is the waxing of the social impulses of the early adolescent.²

Applied to music, the fact that the social effloresces at this age suggests that the time is at hand for emphasis upon mass

¹ Music in Secondary Schools, a Report of the Commission on the Reorganization of Secondary Education, *United States Bureau of Education Bulletin No. 49* (1917), pp. 12-14.

² "Music in the Junior High School," *School Music* (November and December, 1925), Vol. XXVI, p. 3.

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chorus practice and social singing. It implies, too, that the songs should be longer, more mature in both words and music content, and deal more with human relationships as found in the home, the nation, in situations that arise of innumerable and varied human contacts. It means also that the attraction of organizations such as special chorus groups, glee clubs, music clubs, orchestras, and bands is now much greater than before, so that untold possibilities are open to the capable and enthusiastic teacher.

Another characteristic of pupils at this stage of development, posited by this report as accompanying the expansion of the social impulses and springing out of them, is a "vast increase in the strength of the emotions, a marked quickening of emotional sensitivity."

It is in connection with this stage of emotional life that music can play a part of untold value. Given no safe and guarded channels for its expression, the emotional nature of the adolescent is likely to exhibit an unstable, explosive tendency. Music, by virtue of rhythm, the social organization necessary to its expression, its beautifully ordered form and the purity of its emotional range, legalizes and directs emotional expression through safe and beneficial channels.

The proposed offering for junior high schools. The report of the National Research Council already quoted recommended the following outline of courses in music for the junior high school:¹

SEVENTH YEAR

Required

General music: minimum of ninety minutes per week in not fewer than two periods

Elective

Glee clubs, choruses: minimum of forty-five minutes per week in one or more periods

¹ Ibid. pp. 4-5.

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Class instruction in instrumental music: minimum of forty-five minutes per week in one or more periods
Orchestra: minimum of ninety minutes per week
Band: minimum of ninety minutes per week

EIGHTH YEAR

Required

General music: minimum of ninety minutes per week in not fewer than two periods

Elective

Glee clubs, choruses: minimum of forty-five minutes per week in one or more periods
Class instruction in instrumental music: minimum of forty-five minutes per week in one or more periods
Orchestra: minimum of ninety minutes per week
Band: minimum of ninety minutes per week

NINTH YEAR

Required

General music: minimum of one period per week of not less than forty-five minutes

Elective

Glee clubs, choruses: minimum of forty-five minutes per week in one or more periods
Class instruction in instrumental music: minimum of forty-five minutes per week in one or more periods
Orchestra: minimum of ninety minutes per week
Band: minimum of ninety minutes per week
(Elementary musical theory, melodies and chords: minimum of ninety minutes per week in not fewer than two periods
Outside study of music

The course in "general music" is described as follows:

This course consists, in practice, in the singing of worthy songs, part songs, and choruses with the greatest possible taste and devotion to the production of musical effect. Correlatively it includes elementary theory and sight singing, ear training in connection with the tonal features encountered, and instruction

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in correct vocal technic. The development of appreciation of music is also included, in connection with the vocal material performed, by the study of other compositions suggested as to composer, form, content, or mood by the vocal material that forms the basis of the course; in correlation with other educational subjects; and as a collateral study of other types of musical compositions. Compositions other than those sung by the class may be presented through the medium of reproducing instruments or by performers.

The singing organizations suggested are choruses of girls, choruses of treble-voiced boys, mixed-voice choruses, and four-part choruses for boys. The class instruction in instrumental music is in piano as well as in violin and all instruments of the band and symphony orchestra.

[The course in elementary theory] aims to develop in the student knowledge and appreciation of the main characteristics, tendencies, and relationships of tones with respect to rhythms, melody, harmony, and design; and to develop correlatively knowledge of and ability to use correctly the necessary symbols of staff notation. This latter accomplishment is understood to include ability to write correctly all major and minor keys, in all common forms of measure and rhythm, and to do written melodic dictation in measures and keys used. The method in general is the project method.

A few statements may be ventured as a commentary on this proposed program in music for the junior high schools. The question may be raised as to whether all pupils should be held for the requirement in general music as outlined throughout the junior-high-school period. From what we know of variation in individual native musical endowment, this course would be asking the impossible of some pupils. Moreover, in view of all the variation in ability and interest, we may well ask whether we should not be satisfied from the opening of the junior-high-school period upward

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if the pupil pursues *any one* of the lines of music work suggested in the outline above, rather than some particular sort. Probably the work available to meet the requirement in music should include also a course calling for *even less of performance* than is proposed in this general course, especially adapted to those of poor musical endowments. In this connection the general course and others are to be commended for their emphasis on appreciation; perhaps they might go even further in endeavoring to attain appreciation with less of performance. Finally, it may be noted that many junior high schools list the musical organizations with the extra-curricular activities, although a good deal may be said for the benefits derived from legitimating the activities represented by instituting them as a part of the course work offered.

ART

Status of art in the junior high school. Because of the precedent provided in the teaching of drawing in seventh and eighth grades of the conventional school, we may expect to find this field of training given a place in the junior high school. Rodgers reports finding what he designates as "drawing" in both grades of most two-year junior high schools, the work with minor exceptions being among the prescribed subjects.¹ This work is also found frequently in constants-with-variables programs in three-year junior high schools, and, although prescribed in the seventh grade in most schools, disappears to some extent as a prescription in the eighth grade and almost entirely in the ninth, although there is some tendency for it to emerge in these later grades among the electives. The same thing is true in the academic curricula of three-year schools

¹ See again Tables XVII, XVIII, and XIX in this book.

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administering programs with differentiated curricula, but not so true of commercial and practical-arts curricula, because in these curricula it is not often listed with the elective subjects.

Glass found much variation in practice from system to system in the fourteen centers represented in his investigation. While the average numbers of minutes devoted to "art" in the seventh, eighth, and ninth grades were, respectively, 82.9, 85.0, and 120.0, the ranges in the seventh and eighth grades were from 50 to 210 and in the ninth grade from 60 to 200.¹ The "features" he found to be emphasized likewise ranged widely, one or more schools stressing each of the following in some junior-high-school grade: basketry, batik, bookbinding, civic-beauty design, color study, commercial art, costume design, decorative design, drafting, enameling, form decoration, illustration, industrial design, lamp-shade design, leather work, lettering, linoleum block, memory drawing, metal work, modeling, nature drawing, object drawing, pose drawing, pottery, practice of design, stenciling, still life, structural design, theory of design, weaving, wood-block printing, and woodwork.²

The aims of art instruction in junior high schools. The trend of the features just listed is clearly toward production, and if no other information concerning these courses were at hand, one might quite properly infer that the emphasis in the aims to be achieved was toward ability in production instead of toward appreciation. The inference is, nevertheless, incorrect, because the same table which lists these features presents also a description of the art courses. In this description "general appreciation" and

¹ James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, Supplementary Educational Monograph No. 25, p. 25. The University of Chicago Press, November, 1924.

² Ibid. p. 147, Table XXVII.

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"taste and general culture" are the objectives most often stressed. Other descriptive phrases are "art applied to commerce and industry," "art applied to costume," "art applied to home," and "expression and technique." It is apparent, therefore, that production is being emphasized for the sake of developing appreciation, in accordance with a view concerning the relationship between production and appreciation similar to that referred to in the discussion of music as a junior-high-school subject. It may here be conceded again that production or performance may assist in developing appreciation, but that the scope of art applications in life is so wide as to put production in all important phases out of the question in the time that can be allotted to the subject. Resort must be taken in no small part to training for appreciation without production.

In fact, appreciation is being increasingly put forward as the chief objective of art in the junior high school. It may be sometimes conceived as applying only to the fine arts as a purely "cultural" acquisition. It is, however, now more often thought of as touching life much more widely. One statement of aims and values has it that there is, in addition, the "need on the part of the public for good taste and artistic appreciation based upon a sound knowledge of those art principles which may be used in connection with ordinary things of common everyday life,"¹ and urges the offering of school courses directed to this as one end. These aims may be understood to include what is referred to as the "consumer's" need for art knowledge — the need all of us have for discriminating

¹ William G. Whitford, "Determining Aims of Art Instruction for the Secondary School," *School Review* (December, 1920), Vol. XXVIII, pp. 757-771.

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purchase and use of products in the manufacture of which art principles should be operative. The same formulation contends also that drawing as a special phase of the work "is recognized as a valuable means of supplementing expression in the written and spoken word," and that "many people obtain much enjoyment and pleasure from drawing, sketching, composition in photography, and other forms of art work as a sort of recreation or hobby. This may be thought of as a by-product and need not be considered on a par with the other needs of art." Another general educational value included in this formulation is so stated that, although it admits of transfer values, yet it avoids the unguarded acceptance of the disciplinary aim in the all-pervasive sense now generally condemned. It reads as follows:¹

... art work, like other subjects taught in the school, when properly presented, aids in the development of special mental processes and bodily reactions valuable to the pupil. It aids in the better coördination of mind, hand, and eye (development by doing and thinking through action). By providing training in constructive analysis it stimulates specific types of observation, originality, invention, and initiative; it increases the power of visualization, aiding in the capacity of seeing things before they really exist.

Because they were proposed for the "secondary school" in the generic sense and not specifically for the junior high school which is our concern here, one need not be surprised that the statement of aims does not include reference to the service of art courses in exploration and guidance. "Vocational guidance" is, nevertheless, set up as one of the "objectives" in the outline of a course in general art for pupils in the "high school" (presumably the four-year high school) submitted by the same writer.²

¹ Ibid. p. 761.

² Ibid. p. 766.

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Those who plan and teach courses in art for junior-high-school grades could hardly be excused for failing to utilize the work to some extent for this purpose, so as to help pupils in deciding whether they should elect more art in junior-high-school or senior-high-school grades or should consider entering subsequently a related occupation.

The proposed offering. For the general high-school course just mentioned the following "methods" were suggested: introduction to problems through use of line, form, tone, color, and composition; descriptive and informational drawing; drawing from nature; memory drawing; some illustration and painting for beauty; practical design for beauty, and conventionalization; study of line, form, tone, color, and composition in nature, art, and utility; knowledge of industries involving art, gained by collateral reading and trips to factories; principles of art explained and illustrated by objects, photographs, pictures, and drawing on the board; picture study; general application of principles to art problems in life; drafting and mechanical drawing; and construction. The mediums recommended for the work are pencil, crayon, brush, color, charcoal, woodworking, pottery, metal, modeling, leather, bookbinding, cane work, heavy cardboard construction, paper-cutting, toys, block prints (linoleum), weaving, printing, interior decoration, costume design; beautiful objects and excellent prints for stimuli and study, and trips to museum, store, etc. These methods and mediums would, if all were included in such a course, provide a rich range of contact. Although somewhat respectful of the traditions of *production* in high-school courses, this outline lists a number of methods and mediums that seem to suggest training for appreciation without production. It is indeed a far call from this type of emphasis to the courses in "drawing" formerly common in high schools.

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There appears to be no vital reason why this description would not be acceptable for the prescribed courses in the junior high school as well as for a general course taken in the earlier years of the four-year high school. Whether the required content would extend through one or two school years would depend upon the number and length of periods available for the work. Following this prescribed work the junior high school might provide elective courses dealing with one or more special phases of this more general and composite course.

PHYSICAL TRAINING.

The status of physical education in the junior high school. Referring once more to the tabulations by Rodgers¹ we find that, although some junior schools do not offer physical training in any form, the typical practice is to require it for all pupils in all grades. This is true of two-grade schools, three-grade schools administering constants-with-variables programs, and three-grade schools administering programs with differentiated curricula. Almost never is physical training listed with variable or elective subjects.

In the report of practices in the fourteen centers represented in his investigation Glass includes the work in physical training under the general heading of "health," the other main element of the work being "hygiene."² The average number of minutes allotted to the former phase in the three junior-high-school grades was 111.4, 115.6, and 123.8, or approximately two one-hour periods in each grade. The amount of time in the several schools

¹ Quoted as Tables XVII, XVIII, XIX, in Chapter V.

² James M. Glass, Curriculum Practices in the Junior High School and Grades V and VI, Supplementary Educational Monograph No. 25, p. 108. The University of Chicago Press, November, 1924.

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ranged widely, that is, from something like forty or fifty minutes up to two hundred and forty minutes, or from less than a full hour to as much as four hours.

The problem of relationships to other courses bearing on health. This consideration by Glass of both hygiene and physical training under the single heading of health directs attention to the general problem of the relationships of other subjects than physical training to all other health training in the school. The logical intimacy of much of hygiene and of physical training is obvious. To these may be added those referred to in the foregoing chapter in dealing with the junior-high-school offering in science. Besides these there are the problems of community health, which quite properly receive treatment in courses in community civics or elementary social science. Glass discussed the problem of these relationships as follows: ¹

The problem of where health instruction shall be given is largely unsolved. This investigation shows that the instruction is distributed, as it probably should be, among three groups of teachers. First, social studies teachers are giving health instruction as part of their courses of study, covering such features as agencies engaged in promoting physical welfare — clinics, playgrounds, parks, and welfare organizations — health as a public, home, and personal responsibility, etc. Second, science teachers are giving instruction in the physiology of the subject. Third, physical instructors are teaching personal hygiene. In practically all of the centers confusion is evident, due to lack of clear distinctions between the related features of health instruction as taught by the three groups of teachers, and to the consequent overlapping of instruction and waste of instructional time and energy.

In centers where the initiative in securing articulation of the related features of health instruction has been taken by the

¹ James M. Glass, *Curriculum Practices in the Junior High School and Grades V and VI*, Supplementary Educational Monograph No. 25, pp. 120-121. The University of Chicago Press, November, 1924.

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supervisors of health education, conscious and purposeful efforts to articulate the instruction are being made. Inasmuch as health instruction is peculiarly a function of the health and physical education staff of a city school system, it would seem desirable to place the responsibility definitely on the health staff. Certainly it is true that of the related features of health instruction as distributed in general practice among social studies, science, and physical education, the most vital is the personal hygiene instruction, or the functional phase.

Probably the two most logical claimants to the hygiene constituent are the courses in physical training and in science. There are good reasons to support the claims of both. Many aspects of personal hygiene can best be brought up in vital association with physical training proper. Some of these should be placed there and remain there. On the other hand, there is much to be said for the intimate association of physiology and hygiene with many problems finding a natural place in general science and general biology, especially where these are being taught with the aims of giving the pupil understanding and control of the everyday environment. Schools will doubtless be warranted in following either practice or in distributing the content to both fields, at least until there is substantial scientific justification for preferring one to the other. The most important consideration after all, as may be inferred from the statements by Glass, is the coördination of all the health-training program. Our schools and the pupils enrolled have too long suffered from the hit-and-miss attack on the health program from a number of angles. One obstacle to coördination is the separate courses in physiology and hygiene reported in the foregoing chapter as being the typical requirement in the seventh grade of junior high schools. At that point it was recommended that this content be presented either as a part of physical education, of the work in science, or of both.

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These relationships having been thus briefly considered, the remainder of the section will deal only with that portion of the health program included in what is termed physical training.

The aims and values of physical training. The following brief paragraph quoted from the description of physical training in one junior high school is, but for its omission of the obvious aim of recreation (worthy use of leisure), representative of the better recent conceptions of the possibilities in this field :¹

In planning this new program of physical training, two major aims were uppermost in our minds. First, we think it desirable to develop strong, healthy, normal bodies and minds. Second, we think it desirable to foster certain personal, civic, and social attitudes which we believe to fall within the responsibility of the school.

This statement accords, even to the omission of reference to the recreational aim, with the main lines of that made by the Committee on Physical Education of the Commission on the Reorganization of Secondary Education :²

The curriculum of activity [in physical training] both in school and after school should include all pupils, and should be related not only to health, but to right conduct. The qualities of honesty, fair play, courtesy, cleanness of speech, alertness, promptness, persistency, and manliness should be required of pupils during their activity. Both boys and girls should learn the value of positive virtues.

Kilpatrick, in a discussion of the objectives of physical education, encourages the acceptance of a multiple-phase

¹ Harry P. Clarke and Willard W. Beatty, "Physical Training in the Junior High School," *School Review* (September, 1925), Vol. XXXIII, p. 533.

² Physical Education in Secondary Schools, a Report of the Commission on the Reorganization of Secondary Education appointed by the National Education Association, *United States Bureau of Education Bulletin No. 50* (1917), p. 17.

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concept of aims in the field.¹ Starting with the view that "the child is one" and that any significant act on his part will "involve a host of interconnected responses," he proceeds to consider with which, in a tabulation of "remoter and intermediate objectives," physical education should properly be concerned. This tabulation is made up as follows:

- I. Divisions within the full life
 - 1. Vocation
 - 2. Citizenship
 - 3. Family relationship
 - 4. Leisure time
- II. Constituents of the good life
 - 1. Health
 - 2. Morals
 - 3. Breadth of view
 - 4. Scientific outlook
 - 5. Æsthetic appreciation
- III. Traits
 - 1. Habits and skills
 - 2. Information and knowledge
 - 3. Attitudes and appreciations

Summarizing the canvass of these objectives, Kilpatrick has the following to say:²

Among the four divisions assigned to the full life, leisure time is most directly influenced by physical education. As our country becomes more industrial and more urban there is increasing need to care for the leisure part of the day and of the year. Physical education cannot do all, but its part is very great and probably increasing. . . . Health, of course, is most obvious, but morals form a close second, with breadth of view and scientific outlook occupying a real place. Family relation-

¹ William H. Kilpatrick, "What Range of Objectives for Physical Education?" in *Teachers College Record* (September, 1925), Vol. XXVII, pp. 6-14.

² *Ibid.* p. 14.

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ship enters also. Along these many lines physical education has a real contribution to make.

The final conclusion seems thus warranted that the teacher of physical education cannot morally limit his attention merely to bodily welfare. . . .

It is desirable to bear in mind that Kilpatrick was discussing physical education as inclusive of both physical training and hygiene. With the latter phase omitted from consideration, as is here being done, and the aims set up in terms of the formulation presented in Chapter II (pp. 14-15), it may be said that an appropriate program of physical training should make substantial contributions to three major aims, health, civic-social-moral responsibility, and recreation.

Acceptance of such a statement is not necessarily an acknowledgment that these aims are always or even often achieved. The physical-training program must be definitely directed toward realizing them. Such was the intent with respect to the social aim, for instance, of Clarke and Beatty when they kept before the pupils of the Skokie School in Winnetka, Illinois, both by discussion and example, a list of attitudes, the intimate relationship of which to the sports program they were desirous of showing.¹ The list of attitudes or qualities "to be expressed in action on the playing field" included loyalty, honesty, courtesy, modesty, reliability, cheerfulness, initiative, sociability, tenacity, and pugnacity. Descriptions were used in connection with each quality to help pupils keep it in mind in concrete ways rather than as a relatively meaningless generality. To illustrate these descriptions the following are cited: *honesty* (1) in observing

¹ Harry P. Clarke and Willard W. Beatty, "Physical Training in the Junior High School," *School Review* (September, 1925), Vol. XXXIII, pp. 534-536.

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rules of games, (2) in observing standards of competition, (3) in replying to officials' queries, (4) in returning and accounting for equipment, (5) in respecting property rights; *tenacity* (1) in acquiring technique, (2) until game is ended, (3) when on "short end" of score, and (4) when playing against odds.

The writers described one of the outcomes of this stressing of sportsmanlike qualities in the following interesting manner :

We had been making the athletic emblem award to members of the winning teams in all after-school competition, but the effect of this emphasis on attitude appeared a year ago when the children, through their representatives on the student council, pointed out that many times the players who had shown the best sportsmanship, and who had contributed most to the success of the athletic season, were members of losing teams. At their suggestion, a new emblem was devised, the sportsmanship emblem. This is now awarded to the member of each team who, in the opinion of his or her team mates, has contributed most, by good sportsmanship and unselfish coöperation, toward bringing success to his team. It is interesting to note that when these emblems are awarded, the recipient is frequently one who could not possibly be chosen as the best player on his team. The award of sportsmanship emblems apparently meets with the endorsement of the entire student body, for that emblem is at the present time one of the most highly prized honors which a child can receive.

The content of physical training. The Committee on Physical Education proposed two types of exercise for pupils in the secondary school, the "physiological type" and the "character-building activities."¹

[The first group should include] those which call into play vigorously the large fundamental groups of the big muscles;

¹ Physical Education in Secondary Schools, *United States Bureau of Education Bulletin No. 50* (1917), pp. 16-17.

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these exercises are related to the development of vigor, endurance, and power. This instruction should be supplemented by exercises of skill, grace, and alertness. Special attention should be given to securing good postural habits while standing, sitting, and exercising. . . . Instruction should be given in gymnastics, athletics, swimming, and team games for all pupils.

Under the second head are placed team games and athletic contests that are regarded as peculiarly adapted to the development of positive qualities of character when properly administered. Here, too, are included the Boy Scouts, Camp Fire Girls, and the like, which are recommended to receive "vigorous encouragement."

Clarke and Beatty, already quoted, appear to prefer, to the gymnastics thus suggested, a greater emphasis on games. They say: ¹

We believe that having a large number of competitive games offers the big-muscle training and lung development and the precision and promptness of response which are the aims of most gymnastic training, and at the same time satisfies a majority of the play tendencies of early adolescent children. The danger of overstrain which frequently accompanies competitive games can be eliminated by adequate supervision of the children's activities, and it is understood on our playgrounds that games may be interrupted at any time that a player shows fatigue. Our play periods [during the school day], therefore, have been given over to speed ball, soccer, baseball, Newcomb, volley ball, dodge ball, and a large variety of relays. One period a week is devoted to folk dancing for the girls; this is very popular. One period a week during portions of the year is devoted to corrective gymnastics for those children who, in the annual physical examinations, are shown to be suffering from physical defects.

¹ Harry P. Clarke and Willard W. Beatty, "Physical Training in the Junior High School," *School Review* (September, 1925), Vol. XXXIII, p. 533.

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In addition to the use of play periods as thus described, the school referred to conducts an after-school sports program in which practically all pupils participate.

The success of a program of competition of this kind requires the grouping of pupils by age or size as well as segregation and differentiation by sex. The play areas needed are referred to again in a later chapter.

QUESTIONS AND PROBLEMS

1. How does offering bench work in wood only in the field of industrial arts affect the performance of junior-high-school purposes?

2. How are the objectives of the manual arts as administered in St. Cloud related to these purposes?

3. How does restricting the work in home economics in the seventh and eighth grades to sewing and cooking affect the performance of these purposes?

4. Explain why girls who have had the work in home economics in the seventh and eighth grades do not often elect it in senior-high-school grades.

5. Consider the relationships of the aims proposed for commercial work in junior high schools in Denver to junior-high-school purposes.

6. Discuss the acceptability of bookkeeping and shorthand as junior-high-school subjects of study.

7. What are the arguments for and against requiring work in sight singing of all pupils in the seventh and eighth grades?

8. Examine the course outlines for music, art, and physical training in some school system, applying to them the criteria expressed or implicit in dealing with these subjects in this chapter.

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VIII

HOMOGENEOUS GROUPING OF PUPILS

THE PROVISIONS FOR INDIVIDUAL DIFFERENCES

The importance of the recognition of individual differences reëmphasized. The function of recognizing individual differences appearing in pupils in junior-high-school grades was, at the time of giving it special consideration in Chapter II, accepted as one of the important obligations of reorganization. Near the close of Chapter III it was shown to be the function among all others held in highest esteem by a large number of judges. Also, because of the interrelationship of functions it is given additional significance by the acceptance of certain other functions. Thus retention of pupils otherwise eliminated tends to add to the heterogeneity of the total group enrolled, and the varying stages of adolescent development represented in the junior-high-school pupil body likewise increases the problem of adapting the training program to individual needs. Provisions for individual differences should therefore rank high among the features incorporated in this educational unit.

Types of provisions made. Several of the types of provisions for differences among junior-high-school pupils were mentioned at the time of first discussing the function of recognizing them in Chapter II, but it is desirable to set down here a more nearly complete list. This may best be accomplished by associating them for the most part with the features of reorganization named in Chapter IV

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and dealt with there and in most of the chapters following it. First among these is the modification of requirements for admission to the seventh grade. For example, to admit those who are over age in the sixth grade, whether or not they have completed all the work of that grade, is a helpful means of recognizing differences. To do so, however, requires that those in charge of the training program within the junior-high-school period effect changes to adapt it to the wider range of abilities and interests thus brought into these grades. What is called for in the way of a program of studies and in courses to be offered has to some extent been suggested in Chapters V, VI, and VII. The allied activities to be discussed in Chapter XII are somewhat related to the program of studies in its service in providing for pupil differences. The plans and rates of promotion, also, to be dealt with in the following chapter, are fairly to be included among such provisions. Teaching procedures or methods, dealt with in Chapter X, offer one of the richest sources of provision for individual differences. Here may be mentioned what is called directed or supervised study. To mention these suggests the entire gamut of methods of individualization, among them elastic assignments — supplementary assignments for the more proficient pupils — and the unitary or "contract" organization of content within courses which permits the pupil to move forward in the subject at a rate best suited to his abilities. Associated with these are the school organizations known as the Winnetka plan and the Dalton plan, although these plans are not fully described by referring to them as individualized procedures.

Not wholly unrelated to these efforts at individualization of teaching are remedial periods and rooms, with an array of other special groupings, such as "adjustment rooms," "study coaches," and the like. Reference to these calls

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to mind one of the most important of the provisions for individual differences, usually referred to as ability grouping. It is, in essence, a plan of distributing pupils to instructional groups homogeneous as to ability, rather than following the practice of teaching them in heterogeneous, unselected groups. This is almost the only means of recognizing differences not dealt with elsewhere in this book, and on this account it alone is given special consideration in the remaining portions of this chapter.

ABILITY GROUPING

The advantages claimed for ability grouping. Statements listing the advantages of ability grouping generally begin by referring to the better adaptation of the work of the school to pupils of all abilities. Heterogeneous groups contain pupils of such diverse abilities that the instructional needs of all cannot well be provided for. The narrower range of abilities represented in homogeneous groups makes it much more nearly possible to adapt methods and content to less-than-average, average, and superior pupils. Moreover, superior pupils are stimulated to better performance by the presence of other pupils similarly equipped, a type of motivation which has more or less disappeared with the greater popularization of upper grammar and high-school grades, — a popularization that has brought into the grades concerned a larger proportion of less capable pupils. At the same time the latter are not discouraged by being hopelessly outstripped by the superior pupils. All pupils are, more than formerly, spurred on by competition with their intellectual peers and by the joy of accomplishment. This advantage results in another, the improvement in disciplinary matters. The superior pupil is kept busy and has less time for untoward behavior, and the

HOMOGENEOUS GROUPING OF PUPILS

slow pupil is more nearly able to follow the work and is therefore less inclined to disciplinary disturbance. Related to these advantages is the approach to social homogeneity — and even physical homogeneity — in part achieved while effecting homogeneity in scholastic abilities.

These are among the claims most often put forward by those who have had experience with ability grouping, that is, teachers, supervisors, and administrators. This type of testimony has been overwhelmingly in support of such grouping. It must be admitted that although many of the claims can be put to the test of controlled experimentation, evidence of an objective sort has not often been presented. The results of one evaluative experiment will be drawn upon to illustrate this type of inquiry into the question of whether or not we should have ability grouping. This one was conducted during the school year 1924-1925 in the ninth grade of the Harvey High School in Painesville, Ohio, and reported by Billett.¹ The entire class was divided, on average intelligence quotients computed from scores on two forms of the Terman Group Test of Mental Ability, into five sections, two of which were intentionally heterogeneous and the three remaining homogeneous and designated for the experiment as the "fast," "medium," and "slow" groups. The average intelligence quotients of the five sections are shown in the first column of Table XXIX. These averages for the heterogeneous groups (A and B) are seen to be very near 100. Those for the homogeneous groups (C, D, and E) were respectively 119, 102, and 84. The ranges of the intelligence quotients, not reproduced in the table, were, respectively, 81 to 131, 75 to 144, 107 to 132, 97 to 106, and 71 to 96. As soon as

¹ R. O. Billett, "Differentiation of Freshman English for Groups of Different Abilities," *Educational Research Bulletin* of the Ohio State University (April 28, 1926), Vol. V, pp. 185-190.

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the sections had been made up and balanced to conform to the conditions of the experiment, the five tests named in the table were given to all pupils with mean results as shown. The means reported lend some support to the use of the intelligence quotient as a basis for ability grouping in English, since the means for Group C are consistently

TABLE XXIX. AVERAGE INTELLIGENCE QUOTIENTS OF AND MEAN SCORES ON FIVE ENGLISH TESTS MADE BY TWO HETEROGENEOUS AND THREE HOMOGENEOUS GROUPS IN NINTH-GRADE ENGLISH IN THE HARVEY HIGH SCHOOL, PAINESVILLE, OHIO¹

GROUP	INTELLIGENCE QUOTIENT	ENGLISH VOCABULARY	HUDELSON COM- POSITION	CHARTERS GRAMMAR	CHARTERS LANGUAGE	BRIGGS ENGLISH FORM
A (Heterogeneous) .	102	49.3	4.4	10.6	25	23.4
B (Heterogeneous) .	98	49.4	4.5	10.4	23.1	22.5
C (Homogeneous) .	119	70.6	6.4	17.8	32.3	26.0
D (Homogeneous) .	102	55	4.7	16.8	27.3	24.6
E (Homogeneous) .	84	32.6	2.9	7.3	18.6	20.2

higher than those for Group D, and those for Group D consistently higher than those for Group E.

At the end of the experimental period, during which all groups were taught by the same instructor, a uniform examination was given to all pupils still enrolled. Billett has the following to say concerning the results: ²

The results reported in Table [XXX] were obtained on a uniform objective examination, comprehensive enough to give everyone a fair chance, and it was scored mechanically so that

¹ Adapted from Tables I and II on pages 185-190 of R. O. Billett's "Differentiation of Freshman English for Groups of Different Abilities," *Educational Research Bulletin* of the Ohio State University (April 28, 1926), Vol. V.

² R. O. Billett, "Differentiation of Freshman English for Groups of Different Abilities," *Educational Research Bulletin* of the Ohio State University (April 28, 1926), Vol. V, p. 190.

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the judgment of the teacher had no part in the scoring. This table shows that one heterogeneous group contributed just as many failures and the other heterogeneous group contributed twice as many failures as did the homogeneous group composed of students in the lowest third. Of course, Group E, due to elimination, was considerably smaller than either Group A or B, but the evidence is still in favor of the homogeneous group.

TABLE XXX. MARKS RECEIVED ON UNIFORM OBJECTIVE EXAMINATION BY TWO HETEROGENEOUS AND THREE HOMOGENEOUS GROUPS IN NINTH-GRADE ENGLISH IN THE HARVEY HIGH SCHOOL, PAINESVILLE, OHIO ¹

GRADE	GROUP A	GROUP B	GROUP C	GROUP D	GROUP E	TOTAL
A	4	3	6	0	0	13
B	4	2	13	5	1	25
C	7	8	6	11	6	38
D	7	5	4	4	7	27
E	3	6	0	1	3	13
<i>Total marks.</i>	25	24	29	21	17	116

Looking at the figures another way, 67 pupils grouped homogeneously furnished 4 failures, while of 49 students grouped heterogeneously 9 failed. The homogeneous groups earned 25 ratings of A and B while the heterogeneous groups earned 13.

This objective evidence bears only on the question of scholarship and not also on the other advantages of ability grouping claimed. The following quotation from the concluding portions of Billett's report of the experiment refers in part to some of these other values and is typical of claims made:²

Pupils in homogeneous groups were stimulated to greater activity. They seemed to be accomplishing more and were

¹ Table III on page 188 of R. O. Billett's "Differentiation of Freshman English for Groups of Different Abilities," *Educational Research Bulletin* of the Ohio State University (April 28, 1926), Vol. V.

² Ibid. p. 190.

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happier and less restrained in their work than heterogeneous groups. Our teachers of homogeneous groups felt certain that they accomplished much more under this plan of grouping.

All were convinced by observation that homogeneous grouping resulted in greater interest and pupil activity. Furthermore, pupils gained opportunities for leadership and the advantage of participating in discussion, who would never have attained the same in heterogeneous groups, but would have been utterly and eternally discomfited and quelled.

Ability grouping and the peculiar functions of the junior high school. Because we are here considering ability grouping as a feature of junior high schools, its advantages may be thought of in another relationship, that of the contribution they make to the achievement of the peculiar functions accepted for junior-high-school reorganization in Chapters II and III. The canvass of this relationship is facilitated by recourse to column 4 in Fig. 18, on page 131, which indicates ability grouping as being highly important for seven functions, and important for the two remaining functions.

Turning to the specific functions, one is warranted in contending that, since those pupils who were formerly eliminated on account of discouragement by competition with more capable pupils and discontent with continuous failure are made more contented with the school situation, a larger proportion of all pupils beyond compulsory school age will be retained beyond the compulsory period. Economy of time will be encouraged by the advancement of pupils more nearly in accordance with their respective abilities to progress. Ability grouping is being considered here primarily because it has been proposed as a means of recognizing individual differences. Homogeneous grouping encourages exploration and guidance through making it possible to focus attention on the abilities and character-

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istics of pupils in each group, and thereby the better to ascertain their needs present and future. For the lowest group, who will include a large proportion of the over-age pupils who tend to be eliminated sooner than others, it will be desirable and possible to stress vocational motives and relationships somewhat more, by adapting the courses pursued to beginnings toward vocational education. It should be possible to do this even with the general and constant courses without subtracting from their value for general education. Again, for the reason that the low groups include the largest proportion of over-age pupils, they will at the same time include the bulk of pupils farthest along in physiological development. This in itself operates to make for social homogeneity and assists in the recognition of adolescent nature. The importance of homogeneous grouping as an element in the conditions encouraging effective teaching has already been pointed out. The basis has also been laid for accepting homogeneous grouping as stimulating better scholastic performance than can be obtained from heterogeneous groups. Homogeneous grouping should make for a wholesome disciplinary situation, since the brighter pupils will be more completely engrossed by competition only with their peers, while slower pupils, being sectioned with other pupils like themselves, will be removed from a situation which is provocative of the kind of untoward behavior which is their only means of securing self-realization in heterogeneous groups.

A significant inference from this consideration of the relationships of ability grouping to the peculiar functions is that it is beneficial not merely for the recognition of individual differences, that function for which many might urge that it is primarily introduced into a school, but that it can contribute to the performance of all functions in the list.

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Objections and obstacles to ability grouping. It is not to be assumed, in view of the strong arguments in behalf of ability grouping, that vigorous objections have not been raised against this type of effort to adjust the school to the varying needs of pupils. These objections should not be lightly brushed aside. Even if they are not to be regarded as fundamental, they may contain the suggestions for correction of evils that all too easily creep into procedures inherently desirable, especially during the early stages of their development. Freeman, among others, has given thoughtful consideration to these objections.¹ The purpose here will be to reproduce his treatment in epitomized form, although this can hardly be accomplished in brief space without doing some violence to the point of view represented in the statement as a whole.

1. Freeman first takes up the objection lying in the

... confusion between the development of the individual as measured by an absolute standard and as measured by a comparison with others. This confusion creates the bugbear of educational determinism. We are told that classification into ability groups determines the limits of development of the individual. Ability grouping involves no implication regarding the limits of development of either the bright child or the dull child. It may go as far as human nature will allow and the ingenuity and skill of the teacher can contrive. All that grouping implies is that, under the conditions of training, whether they be good or bad, the development of one individual will go beyond that of another. As our methods of education improve, the possibilities of development of all children at all levels will be extended. . . .

While it is true that differential treatment does not imply that any definite limits are set to mental development, there may be some danger that it will encourage in the mind of both pupil and teacher an attitude which overemphasizes possession

¹ Frank N. Freeman, "Sorting the Students," *Educational Review* (November, 1924), Vol. LXVIII, pp. 169-174.

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of ability as distinguished from expenditure of effort. . . . Ability is never a substitute for work. . . . If classification leads either the teacher or the pupil to minimize the importance of careful training and of serious work, due emphasis must be laid upon these necessities.

2. A second objection to ability grouping dealt with by Freeman is that it may cause the less capable child to feel that he is "branded" and that this brings on a consciousness of inferiority. He admits that such a measure as the intelligence test score makes distinctions somewhat clearer than they otherwise are. He argues, however, that "distinctions have always existed and there seems no immediate prospect that they will be done away with." He regards failure of promotion as much more serious in this regard than being classified in a low ability group. It is the business of the school to help the child to acquire such an attitude toward the inequalities of life that he may adjust himself to its conditions with as little friction as possible. To give him work adjusted to his power should aid in this direction.

3. Still another objection raised against homogeneous grouping is that it is undemocratic. Freeman says that this criticism is based in part on the assumption that democracy in a general way means equality, and that from this point of view all pupils must have precisely the same education.

The assumption underlying this train of thought is, of course, false. The only equality which exists is an equality in the right to opportunity, and opportunity is conditioned by the individual's own nature. Furthermore, it would not even be an advantage to give the dull pupil the same kind of training that is suited to the gifted pupil. . . . The only way in which the dull pupil could be given training suited to his capacity and equal to that of the gifted pupil would be to limit the gifted pupil to

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training far below his capacity. This would be a serious violation of the rights of the gifted pupil.

The real difficulty with this whole line of argument is that it assumes that education is a gift by the state to the individual for the benefit of the individual. The only valid conception of public education is that it is for the purpose of fitting the individual to take his place in the life of the community. The community needs the services of every person in it and it needs the best services of which each individual is capable.

4. In discussing the question of whether one can teach more effectively with mixed classes or with classes grouped by ability, the same writer refers to two conflicting objections frequently made: first, that in following the latter plan the dull pupils lack the stimulus of the bright ones, and second, that homogeneous grouping is ineffective, because it does not really separate the bright pupils from the dull ones.

This brings into contrast two opposing objections, both of which cannot be sound. It is asserted on the one hand, that, in homogeneous grouping, classes are too homogeneous, and it is argued on the other hand that they are not homogeneous enough. They are not homogeneous enough because the classification does not succeed in distinguishing with sufficient accuracy between the capacities of the individuals in the various groups. Members of the lower group are really equal in capacity to members of the upper groups and vice versa.

It is clear that both of these opposite criticisms cannot be well founded. As a matter of fact, they may be taken to neutralize each other. The truth is that there is a considerable diversity in the ability of pupils in homogeneous groups. There is enough diversity to provide variety in the contributions which are made to the class by the individual students and to give opportunity for the better students of the group to exercise leadership. There is not as great diversity, however, as there is in mixed groups. To assert that we do not succeed in forming groups of more nearly equal ability by our methods of classification is to fly in the face of well attested facts.

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There are, of course, obstacles that either prevent or hinder efficient functioning of ability grouping. It is not difficult to find teachers who are unwilling and incapable of teaching the pupils in the slower groups. No grouping is justifiable, obviously, where not more than forty or fifty pupils are enrolled in a given class. In such a situation recourse will need to be taken to other provisions for individual differences. There are difficulties, also, in the way of ability grouping in schools of good size where curricula are in generous part variable. It may be judged that this must sometimes be true in eighth and ninth grades where programs of studies with constants and variables along lines suggested in Chapter V are being followed. *Because of vital relationship of such a program to the achievement of the purposes of the junior high school, this difficulty should not be permitted to militate against the provision of the desired program of studies.* It should be possible in schools of good size to recognize both features adequately, especially if care is taken in making the daily or weekly schedule. It may sometimes be necessary, however, to sacrifice ability grouping in the variable subjects where it is ordinarily not always essential. There is also the problem next to be considered, that of determining the groups.

Bases of ability grouping. A great diversity of bases are used in grouping pupils in junior high schools for instructional purposes. This was shown by Dvorak¹ to be true in 1922 and it may be doubted whether the diversity has been much reduced since that time. His responses came from 86 junior high schools to the authorities in charge of which he had put the question "On what basis are grades divided into sections?" In order that the replies to this

¹ August Dvorak, "Recognition of Individual Differences in the Junior High School," *School Review* (November, 1922), Vol. XXX, pp. 679-685.

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question might be as specific as possible, the schools were asked which of the following criteria were used in dividing grades into sections: (1) mental tests, (2) teachers' judgments, (3) standardized achievement tests in subject matter, (4) random selection, (5) sex, (6) school marks earned in previous grade, (8) chronological age. The nature of the practices is made apparent in the following quotation.¹

Analysis of the replies shows that 20 of the 86 schools base their classification on one of the above criteria, 24 schools on two of the criteria, 22 on three, 11 on four, and 9 on five or more of the criteria. While the combinations which might be made of the criteria are many, there seems to be a tendency toward types of grouping. . . .

Further analysis of the data shows that 41 schools use no mental tests and 45 use mental tests; 59 schools use no educational tests and 27 schools use educational tests; 33 schools use no tests and 53 schools use tests; 32 schools rely on one test; 21 schools use more than one test; 21 schools use but one mental test; 24 schools use more than one mental test; 4 schools use but one educational test; 1 school relies on mental tests alone; 2 schools rely on mental and educational tests alone; 21 schools use both mental and educational tests; 9 schools use mental tests and one other criterion; and 4 schools use educational tests and one other criterion.

It is evident that 11 schools rely on random selection alone, while 5 schools rely on teachers' judgments alone as a basis for classification of pupils into sections. Teachers' judgments is listed fifty-eight times. In contrast with these are the criteria of mental and educational tests, which are used together or with other criteria by 21 of the 86 schools. Mental tests is listed forty-five times. At this time, when scientific methods in education should be considered the rule rather than the exception, these data show that there is considerable opportunity in the junior high school for progress. . . .

¹ August Dvorak, "Recognition of Individual Differences in the Junior High School," *School Review* (November, 1922), Vol. XXX, pp. 681-683.

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In reference to particular practices or proposals, it may be recalled that Billett, as quoted above, reported using the average of intelligence quotients obtained from two forms of the same intelligence test. Ryan reported resorting, in efforts to secure an "A" group competent to complete the work of the three junior-high-school grades in two years, to a composite of several standards: (1) no pupil was included whose intelligence quotient was less than 120; (2) no pupil was included whose pedagogical skills were not in excess of the median; (3) no pupil was included who was retarded in physical or social development; (4) no pupil was included whose health was marked "poor" by the physician.¹ Miller has proposed a method of classification which takes into account both mental age and intelligence quotient, this method automatically admitting the influence of chronological age.²

A valuable inquiry along these lines is one by Brooks, who had complete records along many lines on ninety-three pupils in seventh grade.³ His purpose was to find a basis of grouping not too unwieldy for practical use; that is, one that would not involve an impossible amount of testing and other work and would at the same time afford a dependable basis of grouping. In this investigation Brooks's criterion of scholastic success was (1) the average of seventh-grade marks in English, mathematics, history, and geography given to pupils in fairly homogeneous groups by teachers using the same standards in marking different sections, and (2) the educational ages from the

¹ H. H. Ryan, "Grouping Pupils for Acceleration," *Elementary School Journal* (September, 1923), Vol. XXIV, pp. 50-53.

² Wilford S. Miller, "The Classification of 6 A Pupils into Ability Groups," *Proceedings of the Minnesota Society for the Study of Education* (1925), pp. 14-25.

³ Fowler D. Brooks, "Sectioning Junior-High-School Pupils by Tests and School Marks," *Journal of Educational Research* (December, 1925), Vol. XII, pp. 359-369.

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Stanford Achievement Test, which he regarded as the best battery of achievement tests available. He weighted the average marks 2 and the educational ages 1 — admittedly an arbitrary weighting. He divided the pupils into three sections on this criterion and then inquired into the extent each of a number of bases of sectioning would displace the pupils from the sections in which they were placed. The trial bases used included nine group intelligence tests (I. Q.'s in all but a single test); the mean of the group intelligence tests; five achievement tests, including reading, arithmetic, and vocabulary tests; the mean of the achievement tests; Stanford-Binet Test (I. Q.); chronological age; sixth-grade marks; and combination of sixth-grade marks and Haggerty Intelligence Test, delta 2 (I. Q.).

The best basis of sectioning found was the one last named, the combination of sixth-grade marks and intelligence test. On this basis only one pupil of the total of ninety-three was displaced by two sections, that is, he should according to the criterion have been placed in the group at the other end of the distribution. About a fourth of the pupils were displaced one section from that to which they were assigned by the criterion; that is, these were one section above or below where the criterion located them. Displacement by a single section in a three-section grouping is not regarded as serious. Thus almost three fourths were correctly sectioned on this combination basis. It is interesting to note that the best *single* basis was the sixth-grade marks, which showed two-section displacement for two pupils (2.2 per cent) only, and one-section displacement for 34.4 per cent. This finding is contrary to the customary opinions of the relative merit of marks as a basis of sectioning. It is also worthy of mention that sectioning by chronological age (on the

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assumption that the oldest pupils are to be assigned to the lowest section and the youngest to the highest section) would have shown two-section displacement for only 7.5 per cent and one-section displacement for 40.9 per cent. After urging further investigation of the problem, Brooks concludes the report of his investigation as follows:¹

Combining the results of a group intelligence test with sixth-grade marks, and taking into consideration chronological age, we have a fairly accurate basis for sectioning entering junior-high-school pupils, a basis more accurate than any one of the three elements of which it is composed. Undoubtedly other factors are present, but they have not been adequately analyzed or estimated. Certain volitional, emotional, or interest factors may eventually be found to add much to a composite prognosis measure. Absolutely perfect predictive measures may never be found, just because growth or development may of itself introduce a certain amount of change or variation which will continue to elude accurate estimate.

The queries that come to mind concerning the validity of this procedure for general use refer to the introduction of the educational age as a partial criterion and of the average marks earned in sixth grade as a partial basis of grouping. Where marks are the sole measure of success in school work, and these are typically without a foundation in objective testing, such measure is likely to inject a non-coördinating element into the prediction. However, in schools where marks are in part determined by objective educational tests, as may have been true in the school situation represented in Brooks's investigation, the educational age would not be an extraneous element. One can readily imagine, also, a situation in which average

¹ Fowler D. Brooks, "Sectioning Junior-High-School Pupils by Tests and School Marks," *Journal of Educational Research* (December, 1925), Vol. XII, pp. 368-369.

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marks earned in a preceding grade would be an undependable constituent of the basis of grouping. This would be the case in a junior high school drawing pupils from two or more elementary schools in which the standards of marking differ. It is well known that schools in the same city system do vary widely in this regard. However, in junior high schools whose pupils are drawn from elementary schools with essentially similar standards of marking, the utility of marks as an important element of the basis of grouping is undeniable. From such considerations we may conclude that Brooks's preferred basis of grouping may be made highly effective on two conditions, neither of which is always easily attained: (1) that the marks of elementary schools from which pupils come be in some way equated, and (2) that the assignment of marks in the junior high school be in some measure in accordance with results of objective tests.

Another study, at this writing unpublished, which may be drawn upon illustratively as aiming at prediction of success in the junior high school in order to secure the best distribution of pupils to ability groups, is one carried forward during the school year 1925-1926 in Fresno, California. Although some of the elements of the procedure were similar to those used by Brooks, the methods were sufficiently different to warrant a brief description of the project as a whole and reference to some of the findings. The separate bases of grouping which were put to test by the investigator, Grayson N. Kefauver, at the time director of research in the city system, were nine in number; namely, average school marks, the teachers' estimates of capacity, the teachers' estimates of application, Multi-Mental Test score, intelligence quotient from Multi-Mental Test score, Thorndike-McCall Reading Test score, Woody-McCall Arithmetic Test score,

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Monroe Reasoning Test score (in arithmetic), and a composite score based on all these separate measures, with a weighting of 2 on mental age and average of school marks and 1 on each of the others. The pupils represented were all being taught in ability groupings made on the basis of this composite score. The estimates of capacity and application were those made by teachers of these pupils while in the sixth grade and were derived from a ranking of the pupils from 1 to 5, the best pupil being rated 1, the poorest being rated 5, and the other pupils being distributed over the five points of the scale. The measures of success in junior-high-school work used were composites of teachers' rankings and the results of objective tests in the subjects represented in the investigation, namely, English, arithmetic, and the social studies. The objective tests were developed in connection with the courses represented and were based on the content actually taught in class. A different test was constructed in each subject for each of the three ability groups, because the modification of the content in adapting it to the groups made impossible the construction of a test adjusted to all. The rankings on success were from 1 to 10, the best pupil in each class taught by the teacher being rated 1, the poorest pupil being rated 10, and the other pupils of the class being distributed over the ten points of the scale. The purpose of the rating was to avoid the disturbing factor of variation in marking by schools and teachers referred to in discussing Brooks's investigation. In the composite measure of success used in subsequent computations, these ratings were given twice the weighting of the results of objective testing, on the ground that the former were based on a large number of tests and contacts in teaching.

The test of the several bases of grouping in this inves-

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tigation was not that of group displacement followed by Brooks, but the relative size of the coefficients of correlation between each of these bases and each of the measures of success the derivation of which has just been described. The procedure used to measure success made it necessary to obtain coefficients of correlation for each of the three ability groups separately and to average the three coefficients to secure the measure of relationship desired. The variability of each of the homogeneous ability groups is naturally much less than normal for a heterogeneous class group. Consequently the coefficients obtained were much lower than those secured when considering heterogeneous groups representing the whole range of pupil ability. To eliminate the difference in coefficients of correlation caused by this difference in degree of variability and to express the relationship in terms more generally used, the coefficients obtained as previously described were converted (by use of the formula presented by Kelley¹) to the coefficients required to express the existing relationship when the spread or variability is equal to that of the entire unselected seventh-grade group.

Only the coefficients secured by this conversion will be presented here, and not all of these. There is a striking similarity in the coefficients for the different measures which have been named. When the averages of the coefficients for the three subjects (English, mathematics, and social science) are considered, the variation for five of the measures is only that from 0.61 (Multi-Mental Test score) to 0.66 (intelligence quotient). The lowest correlation found was for the teachers' estimates of application, 0.33, and the highest for the composite score, 0.74. A correlation of 0.62 was obtained for the average of school

¹ Truman L. Kelley, *Statistical Method*, pp. 221-223, formula 178. The Macmillan Company, 1923.

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marks, 0.62 for the teachers' estimates of capacity, and 0.64 for the Thorndike-McCall Reading Scale. The situation is practically the same when the subjects are considered separately, as may be illustrated for English. The correlations for this subject in the order of magnitude are as follows: composite score, 0.71; Multi-Mental intelligence quotient, 0.69; average of school marks, 0.66; teachers' estimates of capacity, 0.62; Multi-Mental Test score and Thorndike-McCall Reading Scale, 0.60; and teachers' estimates of application, 0.26. Although the situations for mathematics and social science are not identical with those for English, they are somewhat similar.

We may conjecture from what has been reported that some composite basis of grouping might be found which is more dependable than any one of the bases alone, and which at the same time is not out of the question for practical school use because of its unwieldiness, as some may believe to be true for the elaborate composite basis used here. Just what combination and weighting of the measures will furnish the best basis for grouping had not yet been determined from this study up to the time of writing. The data at hand suggest that the combination of an intelligence test score, intelligence quotient, reading test score, average of school marks in preceding years, and the teachers' estimates of capacity would provide a workable basis. The weighting which should be assigned to each of these measures when combining them must await further experimental evidence.

If the grouping is to be made for a single subject only, as English or mathematics, instead of for all work taken as has been so far assumed, the basis should probably include greater recognition of ability shown in previous divisions of work in the same or related fields, or in tests prognostic of ability in the specific field of study concerned.

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Differentiating the work for ability groups. Dvorak, who inquired into the manner of adapting the subject matter to different ability groups, received replies from fifty-seven junior high schools as follows:¹

	NUMBER OF SCHOOLS
A. Quality of work	49
B. Different rate of promotion	23
C. Amount of work done	
1. Number of pages covered	27
2. Number of topics taken up	26
3. Extra work in superior sections	39

Some of the schools reporting were practicing two or more types of differentiation. Another type of differentiation sometimes mentioned is the methods of procedures in teaching followed. The remaining pages of this chapter will be largely devoted to citing and discussing briefly examples of efforts at differentiation.

An example of differentiation by extent of content covered is afforded in the course of study in mathematics for the seventh grade of junior high schools in Baltimore. The following is the outline of content in "Constructions with Lines and Angles" in the first half year of that grade, the full list of eight topics for this half year being (1) review of and drill upon fundamental processes; (2) the origin of mathematics; (3) geometric forms, plane and solid; (4) lines; (5) graphic representation; (6) angles; (7) constructions with lines and angles; (8) plane figures. In explanation of the asterisks used, it may be said that the course is so arranged as to provide a minimum requirement (unstarred topics), the average requirement (all but double-starred topics), and the maximum assignment (all topics):

¹ August Dvorak, "Recognition of Individual Differences in the Junior High School," *School Review* (November, 1922), Vol. XXX, p. 684.

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Constructions with Lines and Angles 3 weeks

A. Perpendicular lines

1. Construct the perpendicular bisector of a given line
Use compasses
2. At a given point on a given line erect a perpendicular to that line
 - a. Use protractor or triangle
 - * b. Use compasses
3. From a given point outside a given line drop a perpendicular to that line
 - a. Use protractor or triangle
 - * b. Use compasses
4. Construct squares and rectangles
 - a. Use protractor or triangle
 - * b. Use compasses

B. Parallel lines

1. Teach meaning
2. Construct a line parallel to a given line through a given external point
 - a. Use protractor, triangle, or T square
 - ** b. Use compasses
- ** 3. Use protractor to discover that certain angles formed by two parallels cut by a transversal are either equal or supplementary
- * 4. Construct parallelograms
 - a. Use protractor
 - ** b. Use compasses

C. Bisection of angles

Use protractor and compasses

Having already reported on Billett's experiment above, some special interest may attach to his observations on the nature of the differentiation made by the teacher in charge. The differentiation here appears to have been in both method and content:¹

¹ R. O. Billett, "Differentiation of Freshman English for Groups of Different Abilities," *Educational Research Bulletin* of the Ohio State University (April 28, 1926), Vol. V, pp. 188-190.

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When this problem was first considered it seemed that the differentiation of subject matter and class procedure would prove exceedingly difficult. The belief was not substantiated. When a skillful teacher . . . is in charge of homogeneous groups, differentiation of subject matter and class procedure naturally follows. Much of the differentiation was made from day to day, and it proved far more a differentiation of classroom procedure and technique than a differentiation of the course of study. Frequently identical lesson plans served all sections for the day.

The Harvey High School prescribes in the course for the freshman class written composition and oral language which consists largely of the reports of books read in the prescribed outside reading, the essentials of grammar, and the classics necessary to meet college-entrance requirements. It has been found to be quite possible to cover the minimum essentials for college entrance in the slow group and to enrich the work for the other classes. The grammar work, to which an average of one day per week was assigned, was presented in all groups by the problem method. This was one instance of actual individualization of instruction. Much of the work was done during the class period under the supervision of the teacher. Many pupils, however, did additional work in grammar at home. Each class period was a laboratory period. A definite problem and definite instructions were given the pupil, who was then supplied with drill material. When, in his opinion, he had mastered the problem he asked for an examination. He took his examination in class, and the teacher corrected it while the pupil was present. If the examination was passed with a nearly perfect grade the pupil advanced to the next problem. If not, the pupil drilled more and took the second examination later, for the examinations were standardized in two forms. If any one pupil got too far ahead of his section he was permitted to read outside English or study some other lesson during the grammar period. Even here the advantages of homogeneous grouping were obvious, since it was desirable that no pupil have a working rate markedly greater or less than the average of the class.

The slow group did not complete as many problems as other groups. Definiteness of assignment, care in explanation, and

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thorough drill on essentials were observed in all work with the slow group.

In all types of class work certain characteristics of the different groups were so marked as almost to identify them. The fast group scintillated with wit, insight, and appreciation; discussion was lively; statements were challenged; extempore debates were frequent. The group showed an abundance of energy, and the class period passed with little watching of the clock. The teacher who leads this group efficiently must be capable and alert. The energies of the students must be properly directed and sufficient suitable material must be prepared for them. The medium group was capable, industrious, tractable, acquiescent, and less inclined to challenge statements, although discussion was lively. The slow group showed less interest in school work. . . . These students carried on discussion fairly well, however, with the aid of the teacher. Much time was devoted to explanation and drill in this class.

To repeat, differentiation in these English classes under consideration was much more a differentiation of classroom procedure than a differentiation in the course of study. In composition, of course, much more time was devoted in the slow group to sentence structure and paragraph writing than in the other groups. This left less time for the writing of longer themes and for the study of rhetorical technicalities.

Following are the major points in the teacher's plans for a lesson on Julius Cæsar:

GROUPS A AND B (HETEROGENEOUS)

Assignment. Act I of "Julius Cæsar," Scene iii — advanced work.

Aim. To help the pupils understand the scheme of the conspirators as shown in Act I.

Procedure

- I. Parts have been assigned for Scene ii. The scene will be dramatized. A summary speech will also be made by one of the pupils.
- II. Quotations.
- III. Discussion of mythical references and vocabulary.

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GROUP C (HOMOGENEOUS — FAST)

Assignment. Same as Groups A and B.

Aim. Same as above, plus imparting a knowledge of versification, Shakespeare's style, Roman customs.

Procedure

- I. Read "April," by Bliss Carman.
Voluntary comments from the class.
- II. Scene i dramatized and a summary speech given.
- III. Discussion of new words, mythical references, Roman calendar, versification, Shakespeare's style.
- IV. Shakespeare's imagination. (Class had studied "imagination" a few days previously in composition.)
- V. Discussion of the characteristics of leading persons in the play.
- VI. Continue reading.

GROUP D (HOMOGENEOUS — MEDIUM)

Assignment. Same as Groups A and B.

Aim. Same as for Group C, except versification will be omitted.

Procedure

- I. Scene i dramatized as above and a summary speech given.
- II. Review Act I, Scenes ii and iii.
- III. Report on the "Seven Wonders," discussion of myths, and Roman calendar.
- IV. Students pick out passages which have been expressed especially well.
- V. Continue reading.

GROUP E (HOMOGENEOUS — SLOW)

Assignment. Detailed directions for studying Scene iii.

Aim. To understand what kind of men Cæsar, Cassius, Casca, and Brutus were, and the nature of the conspiracy.

Procedure

- I. Scene i dramatized and summary speech given.
- II. Discuss the action of Scenes i and ii.

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III. Discuss characteristics of Cæsar, Cassius, Brutus, and Casca.

IV. Quote previously assigned passages.

V. Continue reading.

These lesson plans show some differentiation in subject matter. Only actual observation of the class work could give an adequate idea of the differentiation in the method of dealing with the same subject matter which homogeneous grouping made possible.

Examples of differentiated rate of progress through the school are reported for the Ben Blewett Junior High School in St. Louis (by quotation from Ryan) and for the junior high schools of New York City. Ryan's effort to secure an appropriate grouping has already been alluded to. In his school he states:¹

One section of each incoming class, the so-called A section, has customarily completed the three grades, VII, VIII, and IX, in two years. Another section, the B section, has completed the three grades in two and one-half years; and the third, or C, section has proceeded at the normal rate.

The report of the survey of junior high schools in New York City includes a description of the plan of classifying pupils into "rapid progress," "normal progress," and "slow progress" groups.² The plan followed for the rapid-progress groups is for them to take all the work of the normal-progress course of the seventh, eighth, and ninth grades and, in many cases, additional work in English, history, etc., and to complete this course in two years or two and one-half years, thereby saving one or two terms. The normal-progress groups follow a second "track" and

¹ H. H. Ryan, "Grouping Pupils for Acceleration," *Elementary School Journal* (September, 1923), Vol. XXIV, p. 50.

² Gustave Straubenmuller (Chairman) and Others, Report of the Committee appointed to make a Survey of the Junior High Schools of the City of New York, chap. iii. Board of Education, New York City, 1923.

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complete the course of study in normal time. The slow-progress groups, as the name indicates, are not expected to progress through the grades at the normal rate. In adapting the work to the abilities in these slow groups either of two practices is followed, the second more often than the first: (1) some subjects, like music, drawing, and science, are eliminated and effort concentrated on "fundamentals" like reading, writing, and arithmetic; (2) all subjects of the normal-progress course are represented so as to give the pupils a "well-rounded" curriculum, but some of the work in each subject is eliminated. The arrangement in New York City as thus described includes both varying rates of progress through the grades and some differentiation of work for the three groups.

These plans affecting the rate of progress through the school grades will be considered again in the following chapter while dealing with plans of promotion.

The question may properly be asked as to whether the four means of differential treatment so far mentioned, namely, by quality of work required, quantity of work covered, methods of teaching, and rate of progress through the grades, are really distinct, or whether some of them are not in essence to be identified with others. It may be safely argued that, regarded in some ways, differences in quality of work done by different pupils are essentially differences in the scope of the work mastered. Our measures of differences in quality are virtually measures of differences in quantity. Then, too, differentiated methods of teaching may be thought of as affecting the extent of content over which the pupil secures mastery within a given period, or as affecting the quality of his work, which in turn may be quantitatively measured. If conceived in this way, the four means first named simmer down to two: (1) variation in the quantity or scope of

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work compassed in a given period, which concerns the degree of enrichment; and (2) variation in the rate of progress through the grades (or acceleration for superior pupils).

One writer, Freeman, has gone so far as to contend that even this distinction is fallacious and that acceleration is the appropriate means of providing enrichment. After having discussed the problem and quoted proposals for accelerating and enriching to indicate their similarity, he summarizes as follows:¹

... we have in the past emphasized the distinction between acceleration and enrichment. In so doing we have made a false distinction. The real distinction is between the adjustment which merely aims at saving time and the adjustment which aims at securing for the gifted an opportunity to do work at a higher intellectual level. We have further assumed that enrichment implies keeping the pupil engaged in the work in which the pupil of average classification of the same age is engaged. This assumption is, I believe, incorrect. Acceleration actually provides enrichment. The work of the advanced grades is intellectually superior because the method which is pursued and the content are superior to those of the lower grades. From this point of view of intellectual adjustment, then, acceleration accomplishes both the saving of time and the enrichment of the instruction.

The point of view that acceleration is the only acceptable means of differentiation for gifted pupils may be assumed to have much in common with the point of view that variation in rate of progress through school grades should be in relation to ability. The latter cannot, of course, be fully acquiesced in without further experimentation and investigation. An obstacle to its acceptance is to

¹ Frank N. Freeman, "The Treatment of the Gifted Child in the Light of the Scientific Evidence," *Elementary School Journal* (May, 1924), Vol. XXIV, p. 661.

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be found in the rather wide variation in ability to be found even within the so-called homogeneous groups. Freeman himself has already been quoted above, in the treatment of the objections to ability grouping, as admitting "considerable diversity in the ability of pupils in homogeneous groups." This diversity calls for differentiation *within* the ability groups, which must be in the nature of enrichment for some pupils as compared with other pupils in the group. We are, in any circumstance, called upon to carry forward differentiation by enrichment at the same time that our eye may be chiefly on acceleration.

QUESTIONS AND PROBLEMS

1. From what is known about variation in ability does the need for ability grouping increase or diminish from grade to grade upward in the school?
2. Observe a class exercise conducted in a class in the seventh, eighth, or ninth grade heterogeneously grouped, and note any lack of adaptation of the content or method to those at the extremes of ability represented.
3. What should you say to parents who object to having their children placed in low-ability groups?
4. Should teachers know the intelligence-test scores or intelligence quotients of pupils in their classes?
5. Illustrate the differentiation of content in American history or general science for ability groups.

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IX

DEPARTMENTALIZATION AND PROMOTION

DEPARTMENTALIZATION OF INSTRUCTION

A universal feature of junior high schools. Two features of the junior high school, departmentalization of the teaching work and the plan of promotion (see Features 5 and 6 in Fig. 18, p. 131), more especially promotion by subject, are so frequently mentioned together that some have been led to believe them to be essentially inseparable. Although they bear important relationships to each other, they may be, and will here be, considered separately.

Judging from the universality of its provision, departmentalization seems to be regarded as a fundamental feature of the junior high school. In fact, this feature has sometimes been the only change that is made from the conventional organization which may be offered in justification of assigning the name "junior high school" to the reorganization effected. It is worth insisting that it requires much more than this single feature, which appeared in upper grades of elementary schools before the advent of the junior high school, to achieve the desired reorganization.

The degree of specialization of the teaching load. The extent of specialization varies from school to school and must be somewhat dependent on the size of the teaching staff. A higher degree of specialization is, of course, permissible in large than in small schools. Stayer, investigating the distribution of the load in ninety junior high

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schools, found 72 per cent of the teachers in schools of the three-year type giving instruction in one subject only. In two-year schools this percentage was 62. He does not, however, report directly what was considered a "subject" in his tabulations, but this may in part be inferred from his statement that for teachers of two or more subjects "there appears to be no generally accepted combination, except for such natural combinations as French and Spanish, history and civics, stenography and typewriting."¹

A similar study for which we have a statement as to what was regarded as a subject in the basic tabulations, is one by Powers reporting for Grades VII, VIII, and IX in elementary schools, junior high schools, and junior-senior high schools in Minneapolis.² The subjects were classified into eleven groups, each group being considered as one subject. English included all work listed under this name or as literature, composition, reading, grammar, and spelling. The social studies included geography, history, and community-life problems. Manual training included mechanical drawing, wood shop, sheet metal, electricity, and printing. Home economics included sewing, cooking, and home management. Physical education included physical training, gymnasium, swimming, hygiene, and physiology. Commercial work included writing in Grades VII and VIII, commercial arithmetic, penmanship (Grade IX), and typewriting. Music included chorus and an elective ninth-grade course in music. The four remaining subjects were mathematics, art, Latin, and elementary science.

In order to make the data for non-junior schools comparable, teachers of ninth-grade work in four-year high schools were included in proportions equivalent to those

¹ Samuel B. Stayer, "The Status of Teachers in Junior High Schools," *School Review* (May, 1921), Vol. XXIX, pp. 379-387.

² J. Orin Powers, *Instructional Outcomes in Junior High Schools*, chap. vii. The University of Minnesota Press, 1927.

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in the other two types of organization. The facts of Table XXXI disclose a large extent of departmentalization even in non-junior schools, almost half the teachers giving instruction in only a single subject and a full fourth in only two subjects. For junior high schools the degree of specialization is more marked, and for junior-senior high

TABLE XXXI. PERCENTAGE DISTRIBUTION OF TEACHERS IN NON-JUNIOR, JUNIOR, AND JUNIOR-SENIOR SCHOOLS IN MINNEAPOLIS BY THE NUMBER OF SUBJECTS IN WHICH THEY WERE GIVING INSTRUCTION ¹

NUMBER OF DIFFERENT SUBJECTS	NON-JUNIOR SCHOOLS	JUNIOR HIGH SCHOOLS	JUNIOR-SENIOR HIGH SCHOOLS
1	48.8	82.4	93.8
2	25.5	14.5	6.2
3	17.0	2.6	
4	3.2	0.5	
5	3.2		
6	1.1		
7	1.1		
<i>Total</i>	99.9	100.0	100.0

schools it is still higher. Even this method of analysis does not disclose all that needs to be known in order to ascertain fully the extent of specialization, since many teachers may be giving instruction in a single subject in one grade only or in a single division of one grade, and not in two or three grades of the school.

Such data as these prompt the question as to how far specialization of instruction may go and still conserve the interests of the pupil. When carried so far that members of the staff give instruction in a single grade only or in one division of a grade, — for example, in English or arithmetic

¹ From Table CXIII in J. Orin Powers's "Instructional Outcomes in Junior High Schools," chap. vii. The University of Minnesota Press, 1927.

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in Grade VIII B, — there is the danger of a lack of vertical articulation in the work from grade to grade, the teacher in one grade not having intimate knowledge of what is covered in the grade preceding or how the work is carried on. Without vigorous efforts to offset negative influences, there is the greater danger that disciplinary and social control of pupils will to some extent break down under conditions of complete departmentalization. If, as is sometimes contended, such complete departmentalization is hazardous to the disciplinary and social welfare of ninth-grade pupils in the first year of the four-year high school, it must be even more so for the younger pupils in the seventh and eighth grades of the junior high school. This must be especially true in systems where there is no departmentalization — no deviation from the one-teacher regimen — in grades below the junior high school. Where the work of the grades below the seventh is in no part departmentalized, it appears the better wisdom to move gradually toward full departmentalization, so that the pupil may become accustomed by degrees to the responsibilities and exigencies involved. The preferences of teachers for the conveniences of the narrower specialization must not be permitted to militate against the best interests of pupils. It is probably needless to explain that this is in no sense an argument against departmentalization, but rather the encouragement of such an extent of departmentalization as will secure a desirable balance of specialization of teaching work and disciplinary and social control of pupils.

Departmentalization and the peculiar functions of the junior high school. The significance of departmentalization in achieving the special purposes of the junior high school may now be briefly reviewed, although, for convenience in following the thought, not in the order of their

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original presentation in earlier chapters. Specialization of the teacher's work is essential to the performance of a number of these special purposes. Its vital relationship to providing the conditions for better teaching is one very frequently referred to in literature dealing with reorganization. The necessity for it in these grades as contrasted with grades below the seventh emanates from the teacher's need of an increasing knowledge of subject matter with the increasing mental grasp of the pupil. Without such specialization we may not hope for the beginnings of vocational education we should expect, nor may we demand that the teacher be capable of offering to pupils anything like adequate opportunities for exploration. As a consequence recognition of individual differences will be somewhat restricted. This specialization should also bring with it, more often than does the poorer preparation in subject matter of the teacher in the conventional organization, the inspiration of the pupil to better effort and to a higher grade of scholarship. It should result in an enrichment of content and effectiveness of method that will enlarge the socializing opportunities. These results will in turn be accompanied by an improvement of the disciplinary situation. The achievement of this disciplinary phase of the function last named in Fig. 18 should be markedly accelerated by the relief to the pupils through the changes of teachers and rooms that come with departmentalization. The socializing phase will be better performed by the larger number of teachers with which the child will make contact. Economy of time will in some measure be effected, because, through departmentalization, one teacher will often present the work in the same subject in successive grades and will consequently be in a position to know what is covered in each grade, thereby being enabled to avoid unnecessary duplication. Finally,

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by assisting in achieving a number of the functions as indicated, departmentalization will encourage the pupils' retention.

PLANS OF PROMOTION

Modified plans of promotion in the junior high school. Study of the organization of junior high schools shows that a number of different means is being used to adapt rates of promotion in these grades to the wide variety of ability represented among any large number of pupils and to forsake as the sole practice the rigid annual or semiannual promotion typically in use in the upper grades of the eight-year elementary school. These means include promotion by subject, differing rates of progress through ability grouping, as mentioned while discussing this subject in the foregoing chapter, study-coach plans, remedial rooms, special-adjustment rooms and schools for irregular pupils, and individualized teaching (to be referred to again in the following chapter). Most of these will next be briefly considered.

Promotion by subject. Subject promotion is almost as common a feature of reorganization as is departmentalization. As has been indicated, by some it is regarded as a part of departmentalization. Childs found it to be "a well-nigh universal practice with junior high schools" in Indiana.¹ As early as 1916 the present writer, in an investigation made for a committee of the North Central Association, found that, in a group of 46 reorganized schools distributed in twelve states of the Middle West, 34 were promoting by subject.²

¹ H. G. Childs, *An Investigation of Certain Phases of the Reorganization Movement in the Grammar Grades of Indiana Public Schools*, p. 47.

² "Digest of the Responses to the Questionnaire on the Junior High School," *Proceedings of the Twenty-first Annual Meeting of the North Central Association of Colleges and Secondary Schools* (1916), p. 186.

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The justification of subject promotion is to be found not only in the fact that in the actual school situation pupils are given failing marks, sometimes in large proportions, but more because they often receive such marks in some subjects of study while receiving passing marks in most others. The likelihood of a pupil's receiving passing marks in some subjects and failing marks in others is increased by variation in standards of work from teacher to teacher in the same school, and by the fact that a given pupil is likely to have what seem to be special disabilities in some subject while being successful in most or all other subjects. As illustrating the unequal efficiency of individual pupils in different subjects, we may cite the coefficients of correlation found by two investigators. Parker reported the following coefficients between marks of two hundred and forty-five ninth-grade pupils:¹

English and history	0.62
English and science	0.58
English and algebra	0.55
English and drawing	0.15
Science and history	0.56
Science and algebra	0.40
Science and drawing	0.20

A. G. Smith found the coefficients between the marks of over fifteen hundred children in the grammar grades of the New York City schools to be as follows:²

English and mathematics	0.395
English and geography	0.435
English and drawing	0.155
Mathematics and geography	0.36
Mathematics and drawing	0.14
Geography and drawing	0.125

¹ Cited by Edward L. Thorndike, *Educational Psychology*, p. 36. Lemcke and Buechner, New York, 1903.

² *Ibid.* p. 37.

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The coefficients lend some support to the statement often made that if a pupil succeeds in one subject, there is considerable likelihood that he will succeed in others, and that if he does poorly in one, he will do poorly in others. At the same time the measures are small enough to urge inclusion of promotion by subject as one of the features of reorganization. It is worth noting that this modification involves no greater change than introducing subject promotion two grades lower down in the system than the ninth grade, where it has already over a long period been a universal practice.

Consideration of promotion by subject calls to mind a practice sometimes followed in schools administering courses directed toward exploration or try-out, of not failing pupils in such courses. It may be recalled that such courses were listed in the seventh-grade offering of the constants-with-variables type of program of studies reported in Chapter V as being administered in Oklahoma City. The four nine-weeks "broadening" and "finding" courses taken by a pupil in this grade constitute one of the six "units" making up the year's program for each pupil, that is, a sixth of the work in this one year. The following statement by Bruner describes the policy in the schools of Okmulgee, another city in Oklahoma in which similar courses were offered:¹

Obviously, it would be unfair to offer a course wherein an attempt is made to see whether or not the child is interested in the work presented, and then to fail him because he is not interested; therefore no child should be failed in broadening and finding work. He is given marks which are recorded in the office and he receives credit for the course, but his marks are not averaged with marks made in other courses. The fact that

¹ Herbert B. Bruner, *The Junior High School at Work*, Teachers College Contributions to Education No. 177 (1925), p. 71.

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the pupils were acquainted with the scheme of marking did not seem to have any appreciable effect on their efforts to take full advantage of the work presented.

To those who have misgivings as to the influence such a practice might have upon standards of work throughout a junior high school and upon subsequent scholastic efficiency of pupils in the senior high school, it may be pointed out that the proportion of the total work taken by the pupil represented by these primarily exploratory courses is small and that in all other portions of their work, including the constant subjects, pupils are held to usual standards. There is, moreover, some justification for admitting pupils to senior high schools, especially in view of the special services the junior high school is endeavoring to render, without insistence that an absolutely full quota of successful work be offered for entrance. This is, however, far from a recommendation of the complete removal of standards for admission to senior-high-school work.

Modifying rates of progress through junior-high-school grades by means of ability groups. Varying the rate of promotion was one of the means reported in the foregoing chapter as being used to adapt the work to pupils in ability groups. By way of indicating the extent of acceleration effected in one of the situations mentioned at that point, the junior high schools of New York City, certain numerical data may be quoted from a study reported by a survey committee, of which Gustave Straubenmuller was chairman, appointed by the superintendent of schools.¹ Of all pupils — 9295 in number — completing the three-year junior-high-school course in January and June in 1922,

¹ Gustave Straubenmuller (Chairman) and Others, Report of the Committee appointed to make a Survey of the Junior High Schools of the City of New York, chap. iii. Board of Education, New York City, 1923.

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13 had done the work in 3 terms (semesters); 4086, in 4 terms; 1546, in 5 terms; 3188, in 6 terms; 386, in 7 terms; 67, in 8 terms; and 9, in 9 or more terms. On the assumption that completion in 6 terms is normal progress, this is 9757 terms gained and 548 terms lost, or a net gain of 9209 terms. This is, again, a net gain of almost a half-year per pupil. Moreover, from the figures quoted, it may be seen that somewhat less than half of all pupils completed the three years in two years, the great bulk of these presumably being in the "rapid-progress" groups. Another way of interpreting these data is to say that 5645 pupils, or *more than three fifths of all*, progressed at a rate more rapid than normal.

In accordance with the view expressed while considering ability grouping near the close of Chapter VIII, accelerated progress of superior pupils through school grades is to be desired. Any question that may be asked concerning the rate of progress as just reported for New York City concerns not the fact of acceleration but its large extent, by which a majority of pupils are promoted more rapidly than at the normal rate of one grade per year. Among considerations that may be mustered in support of such a rapid rate are three. (1) One of these would be a state of over-ageness in the elementary grades of the system as a whole that required prompt and thoroughgoing correction in junior-high-school grades. Although this may have been the condition, no data are presented in the report disclosing such a situation. (2) A second consideration would be the admission that the curricula and syllabi in use in the system were geared at too low a rate for the *normal* pupil. It is difficult to believe that all our experience in schools at adapting the work to the abilities of the average pupil has, to change the figure, missed the target by such a wide margin. It is more reasonable to accept the

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view of Freeman, who, in discussing a problem somewhat related to the present one, said:¹

Through a long empirical process, the curriculum of the different grades has become adapted to the intellectual level of children of the corresponding ages. No one contends, of course, that this adaptation is perfect, but it works roughly.

On this assumption it is not unlike trying to lift oneself by one's boot straps to endeavor to make such large gains on what we have long regarded as the normal progress of one grade per year. (3) The third consideration is dependent on the acceptability of the second, and refers to the claims sometimes made that we shall be able with proper reorganization to reduce the eight-year period of schooling beginning with the seventh grade and ending with the second college year to six years for the typical student. This is urged on the grounds of the analogy this affords with the organization of education in certain European countries, notably Germany and France, in which the theoretic age of the completion of all general education is eighteen years.² There can be little doubt that superior pupils will be able to compass this period of training in six years or less. It is sometimes accomplished even now with little encouragement for acceleration. But to set up six years as the norm is to encounter the same obstacle of the approximate appropriateness of present-day curricula to average capacities of youth of corresponding ages as already referred to. Should it become the general conviction of educational leaders that an economy of time of this large extent should be achieved for the average stu-

¹ Frank N. Freeman, "The Treatment of the Gifted Child in the Light of the Scientific Evidence," *Elementary School Journal* (May, 1924), Vol. XXIV, pp. 652-661.

² For an examination of this analogy see pages 235-249 in the author's "Junior-College Movement" (Ginn and Company, 1925).

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dent, before being effected it would first need to be justified by a stupendous program of research into improved methods of learning and teaching and into the elimination of overlapping or otherwise functionless content. Some promising beginnings have been made in this direction. Meanwhile we should proceed with the acceleration of superior pupils chiefly.

Problems arising from increased promotion rate through homogeneous grouping. One of the problems most frequently recurring in discussions of accelerated promotion of superior pupils in junior high school and elsewhere is that concerning maladjustments, chiefly social, apprehended in the association of these pupils with others much older than they. This problem has been so well stated and treated by Freeman that we will do well to quote him at some length and without further comment:¹

Another objection which may be made to acceleration is that it will bring into association pupils of different physiological ages and hence different degrees of social maturity. Our knowledge of the relation between social maturity and physiological age is meager, and it is not certain that social adjustments are not in considerable measure related to intellectual development as well as to physiological development. Witness the fact that very backward children play with children younger than themselves. However, this undoubtedly raises a problem which must be met. The problem has been acute in the past because of the fact that by the customary method of grade skipping only the exceptional child has been advanced, and he has been very much in the minority.

It is probable that this difficulty can be overcome. In the elementary school, instead of the brighter pupils being promoted into higher grades which are made up largely of average pupils, the brighter pupils may be kept together, and the work

¹ Frank N. Freeman, "The Treatment of the Gifted Child in the Light of the Scientific Evidence," *Elementary School Journal* (May, 1924), Vol. XXIV, pp. 659-660.

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of the higher grades may be brought down to them. They may then associate with the other pupils who are of the same age on the playground, in manual work, and in the general social activities of the school. This mode of adjustment, however, cannot very well be carried over from one school to another. When the break comes between the elementary school and the junior or senior high school, or between the high school and the college, it is necessary for the accelerated pupils to move into a different social group. At these points we must rely on the presence of a large enough number of accelerated children to modify the general make-up of the group to such an extent that the younger child or student will not be isolated, and will therefore not be ostracized because he is an exception. In fact, the increase in the rate of advancement of children through the schools and the increase in the number of accelerated pupils which have already taken place are even now so lowering the average age in high school and college that the young student is isolated to a much less degree than he was formerly. When only a few pupils were advanced beyond their fellows, they were conspicuous and encountered difficulties in making social adjustments, but as a larger number enter high school and college below the hitherto conventional age, the young individual has a sufficient number of companions to give his age group respectable standing in the school. The introduction into the high-school or college community of a sufficiently large group whose demand for recognition rests more on intellectual attainments than on athletic prowess or the social grades may serve in time to bring intellectual achievement to a parity with these other bases of prestige.

Another problem seen by some to arise out of the rate of progress induced by ability grouping is to be found in the more nearly regular promotion claimed for the less capable pupils. Even after all possible credit is allowed for the higher level of scholastic efficiency of such pupils, in harmony with the spirit and special purposes of the junior high school, many will be advanced to the higher grades and to the senior high school for whom these were

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unattainable in an earlier period. Even if requirements are set in terms of an accomplishment quotient that requires pupils to perform up to capacity, to many teachers in senior high schools and to critics of the schools this will seem like a violation of standards. The only answers to be made must be in terms of what seems to be the aspiration of the American people to afford a secondary-school training for all who can profit by it. If secondary education is to be conceived in traditional terms, the lower limits of ability that can succeed are not so difficult to establish; there is some information at hand concerning this. But we know much less about the minimum level of intelligence admissible in a democratic secondary school, except that it is lower than that adequate to conventional standards of work.

Other plans affecting the rate of promotion. Notwithstanding their importance, only brief space will be taken for mention and illustrative description of other means of influencing the rate of promotion of pupils to or through junior-high-school grades, especially of pupils who are more or less "out of step" in school. There is the "study-coach" organization, classes in it being segregated from the regular organization. The program includes only the major branches: English, social studies, and mathematics. This work takes up most of the periods of the pupil's day, the time usually given to such special subjects as shop, home economics, and music being spent in helping pupils to regain their normal classes in these basic subjects.¹ There is also the "unassigned teacher," who teaches individuals or small groups. Here also belongs the "remedial" class or room, and also the "adjustment" room or school. Because it has special significance for

¹ This description is based on James M. Glass's "Classification of Pupils in Ability Groups," *School Review* (September, 1920), Vol. XXVIII, p. 505.

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junior-high-school grades and for fitting irregulars into the regular program, even though as maintained it is not a part of the junior-high-school plan, the "intermediate school" in Fresno, referred to as an "opportunity and adjustment school," will be briefly described.¹ This school was established for all pupils thirteen years of age or older who had not graduated from the six-year elementary school. The following paragraphs describe it.²

The course of study . . . gives particular attention to instruction in the English language and arithmetic, these being the two subjects with which most pupils have trouble. On entering the school, all pupils are given standard tests in reading and arithmetic and are grouped in classes according to ability. In addition to the work in reading and arithmetic there is instruction in physical education, music, general science, industrial art, spelling, shop work and agriculture for the boys, and home economics and practical home-making for the girls. Geography, history, and hygiene are correlated with other subjects. The work in English and arithmetic is of junior-high-school grade. All work is departmentalized, and numbers are used instead of grades to designate the groups. . . .

All pupils are required to take English and arithmetic, but the amount of instruction in these subjects is adjusted to the abilities and needs of the pupils. Other subjects are tried until programs are found which are suited to the particular needs of the individual pupils. No pupil is continued in a subject if lack of interest and progress is shown after proper trial. Wherever possible the work of a department is planned and adjusted to fit and supplement the work of other departments. The aim is to make the course elastic enough and broad enough to provide an opportunity for every pupil. Daily conferences and discussions by the faculty over the luncheon table keep the work moving in a synchronized and harmonized fashion.

¹ Homer C. Wilson, "An Opportunity and Adjustment School of the Intermediate Type," *Elementary School Journal* (November, 1924), Vol. XXV, pp. 184-190.

² *Ibid.* pp. 185-186.

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In speaking of the advantages of the plan, the head of the school mentions the elimination of adolescent pupils from the elementary school, with the attendant disciplinary relief; the better work and diminished discouragement in ability grouping; advancement of pupils from group to group "as fast as they can accomplish the work," with many overcoming entirely their retardation handicap etc. In pointing out the distinctive features of the school, among others, he refers to the wide range in the chronological ages of pupils — from eleven to twenty years; the large amount of retardation represented; the large number of nationalities; and the rapid turnover, practically a third of the total enrollment being graduated each semester. The nature of the progress, determined by standardized tests, of pupils in this school may be shown by reporting the numbers of semesters gained in one semester by one group of eighty-six graduated February 1, 1924: one pupil, 7 semesters; one, 6 semesters; two pupils, 5 semesters; two, 4 semesters; ten, 3 semesters; twenty-five, 2 semesters; thirty-two, 1 semester; and thirteen, no gain. A total of 143 semesters was gained by the eighty-six pupils. Many of the pupils are transferred to the regular grades of the junior high school. Others go to a special division of the local "technical schools."

A question that arises in considering such a plan, but which cannot be answered for this particular situation without a knowledge of local conditions, is why this work is not maintained in connection with junior high schools. The new unit may properly be expected to have the equipment necessary for the special work given, as well as an offering that, with some readjustment, may be adapted to the special needs represented. More important, many junior high schools are already caring for such pupils, these having been brought in on the assumption that the

DEPARTMENTALIZATION AND PROMOTION

new unit is democracy's school, and as a result of the modification of admission requirements. This modification is referred to in Chapter IV, and in general calls for the admission to the junior high school of over-age pupils who are not subnormals and who may not have completed all the work of the preceding grades.

The modified plans of promotion and the peculiar functions of the junior high school. The relationship of these adjustments in plans of promotion to achieving the purposes of the reorganized school may be illustrated by special consideration of the first one dealt with,—promotion by subject. Including it as a feature would clearly be a recognition of individual differences, because it would not force on the pupil failing in one or more "important" subjects the waste of time of repeating the work in which he has not failed. This he is often called upon to do where subject promotion is not practiced. Permitting him to advance at least in the part in which he has been given passing marks and requiring him to repeat only those constants in which he has failed, will often keep him in school past the period of compulsory education. The pupil affected by the conventional plan of promotion in the manner referred to, through the expression of the resentment he harbors, is often a disturbing factor in the disciplinary situation, subtracts from the possibility of securing conditions for effective teaching, and has a detrimental influence on scholarship. Promotion by subject reduces the frequency of these obstructions to an efficient school. It is necessary also in administering a program which is to allow for exploration and offer the beginnings of vocational education. Other adjustments in the plans of promotion which have been referred to have bearings no less significant on the special purposes of the junior high school.

16th
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QUESTIONS AND PROBLEMS

1. Why are departmentalization and subject promotion often associated as a single feature?
2. Why is departmentalization more necessary in the higher than in the lower grades of the school system?
3. Suggest means by which the dangers of complete specialization of instruction may be reduced without reducing the extent of departmentalization.
4. Can promotion by subject be overdone?
5. What difficulties are likely to be met with in carrying out a policy of subject promotion?
6. What, if anything, do subject promotion and accelerated promotion of superior groups have in common?

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Begin 7th exam

X

METHODS OF TEACHING

INNOVATIONS IN TEACHING PROCEDURE

The importance of methods of teaching. Another feature of the junior high school to be considered is represented in the procedures in teaching which are followed in these grades (Feature 7 in Fig. 18, p. 131). The whole question of method has been regarded as highly significant in reorganization, especially in those schools in which reorganization has been most thoroughgoing.

The view is often expressed that content and method are so inextricably interinvolved that they must be worked out together. This view is so plausible that exception may hardly be taken to it. This does not preclude, however, considering them separately. Such separate consideration is practicable at least in the general phases of the problem of method.

Recent innovations in methods of teaching. The need of breaking with tradition in matters of methods of teaching in any school committed to reform is obvious as soon as one attempts to characterize the conventional procedure. Judd has referred to the latter as the "examination" method of teaching, "the familiar one of calling a pupil to his feet and then asking him one question after another to find out whether he has learned his lesson."¹ In the endeavors to obtain a procedure more highly functional than

¹ Charles H. Judd, *Introduction to the Scientific Study of Education*, p. 234. Ginn and Company, 1918.

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this a number of innovations have appeared. Because of their variation from school to school, the wide divergence in definitions and descriptions of them, and the fact that some of them incorporate phases of others, it is impossible to provide a list of these the members of which may be regarded as distinct. A working list that may be suggested includes directed, or supervised, study, the project and problem, the socialized recitation, individualization, the laboratory method, the shop method, and the excursion. Only the first four of these will here be considered directly, although the others are represented by implication.

DIRECTED STUDY

Prevalence of directed, or supervised, study in junior high schools. It is safe to say that the first type of innovation named above, directed, or supervised, study, is the one most frequently instituted in junior high schools. This is attested to directly by studies reporting the proportions of these new units in which this type of method is used. It is also shown in the proportion of schools reporting the provision of fifty-minute to sixty-minute class periods. Periods approximating an hour in length are provided more often than any other. The aim in lengthening the period is usually to allow for study under direction.

The purposes of directed study. No small range of values is ascribed to this type of procedure. An examination of many writings shows that those claimed by no two writers coincide in full. There are, nevertheless, certain claims recurring more frequently than others, among them the following: (1) affording attention to individual differences among pupils; (2) making for effectiveness of assignments; (3) reducing emphasis on "pure" recitation; (4) fostering self-activity and personal initiative on the part of pupils;

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(5) teaching the pupils how to study the subject; (6) developing habits of study; (7) making for efficient home study; and (8) making possible the evaluation of intellectual and moral traits of pupils.

The values are, obviously, not mutually exclusive. The second, making for effectiveness of assignments, has a bearing on fostering self-activity and initiative and on efficiency in home study, and the latter in turn should assist in teaching the pupil to study the subject and in developing habits of study. Again, achieving the third value, reducing emphasis on pure recitation, should assist in attaining certain others like the fourth, fifth, and sixth. In fact, it is possible to think of the values listed under the second, third, and seventh classes as partial means to the attainment of those remaining, which may be looked upon as expressive of the special services renderable by this innovation in teaching procedure. These may, by combining the fifth and sixth as a single value, be reduced to four, those having to do with (1) attention to individual differences, (2) self-activity and initiative, (3) effective study both in specific subjects and in general, and (4) evaluation of traits of pupils.

Comparison of the disposition made of long and short periods. It may be inferred from what has been said above that a school's committal to a policy and practice of supervised study is typically accompanied by the introduction of a class period of greater length than was formerly typical, the intent being to give latitude for the supervision of study. The longer period is distributed in various ways to study, recitation, assignment, and the like, the practices in this regard varying in different schools and with different teachers and subjects in the same school. An earlier practice, not now so often followed, was to divide the period into two parts, one being devoted to recitation in its

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conventional form, the other to study and assignment. In some schools this practice went so far as to provide a general school signal about midway in the period, at which time the class was expected to shift from one kind of activity to the other. In some cases the disposition of the period is much more elaborate. An example is the following, in which a period of sixty-two minutes is concerned: (1) recapitulation, five minutes; (2) statement of business of the day, two minutes; (3) discussion, twenty-five minutes; (4) assignment, five minutes; and (5) study period, twenty-five minutes.¹ The trend of opinion and practice seems now to be toward less formalism in the disposition of the period, and toward adapting the distribution to the several kinds of activity from day to day as needs arise.

Some notion of the disposition of the period in schools following a less formal practice may be obtained from data on (1) amounts and percentages of class time devoted to each of the kinds of activity and (2) the order of appearance of these kinds of activity within the period. Any deviation in practices in the long period from those in the short period is made to stand out by comparisons in these two respects. These comparisons are afforded by Tables XXXII and XXXIII. The original materials represented in the measures reported were obtained through actual observation of a large number of long and short periods in several high schools in a city system, some of which were operating schedules with periods intended to be sixty minutes long and including provision for supervised study, and others of which had schedules with periods forty-two to forty-five minutes long.

The most significant difference in the average number of

¹ Eula Young and M. R. Simpson, "A Technique for the Lengthened Period," *School Review* (March, 1922), Vol. XXX, pp. 199-204.

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TABLE XXXII. AVERAGE NUMBER OF MINUTES AND AVERAGE PERCENTAGE OF TIME DEVOTED TO EACH KIND OF ACTIVITY IN ONE HUNDRED AND SEVENTY-SIX LONG PERIODS AND ONE HUNDRED AND SIXTY-SEVEN SHORT PERIODS

KIND OF ACTIVITY	AVERAGE NUMBER OF MINUTES		AVERAGE PER CENT OF PERIOD	
	Long Period	Short Period	Long Period	Short Period
Recitation	24.0	27.1	42.4	62.5
Assignment	5.7	5.1	10.1	11.9
Study	13.1	3.7	23.0	8.5
Test	3.6	3.4	6.3	7.8
Other	10.3	4.0	18.2	9.3
<i>Total</i>	56.7	43.3	100.0	100.0

minutes is in study. This was to have been expected. The next largest difference is in "other" kinds of activity, such as lecture and demonstration. In these the long period exceeds. The only kind in which the short period exceeds is recitation. As to time used in assignment and tests the amounts are almost equal. The percentages bring out the proportionate emphasis somewhat more clearly. It is significant to note that some supervised study was found in the short-period schools, probably stimulated by appreciation of the advantages of this kind of activity in the long-period schools.

The order of the activities is indicated in Table XXXIII by the sequence of initial letters. Thus R A S means that these particular periods began with recitation, followed with assignment, and closed with supervised study. The fact of significance is the wide variation in order and combination of activities in both long-period and short-period classes.

This situation is not described so as to establish a norm of practice, but merely, as already stated, to show the

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condition where no form has been set for all to follow. It is very likely that the teaching in the various subjects, of different types of content in the same subject, and of the same type of content to different groups of pupils would require as great a variety of adaptation of procedure as is here disclosed.

TABLE XXXIII. FREQUENCY OF APPEARANCE IN LONG AND SHORT PERIODS OF THE DIFFERENT ORDERS OF TYPES OF ACTIVITY ¹

LONG-PERIOD CLASSES				SHORT-PERIOD CLASSES			
With Supervised Study		Without Supervised Study		With Supervised Study		Without Supervised Study	
Order	Number	Order	Number	Order	Number	Order	Number
RAS . .	30	RA . .	12	ARS . .	7	RA . .	37
ARS . .	19	AR . .	8	RAS . .	5	AR . .	37
RTAS . .	6	AO . .	4	SRA . .	4	R . . .	7
TARS . .	5	OAR . .	4	AS . .	4	ORA . .	5
ASR . .	5	O . . .	4	RAST . .	3	ATR . .	3
Others . .	45	Others . .	18	Others . .	14	Others . .	34
Total . .	110	Total . .	50	Total . .	37	Total . .	123

Teaching pupils how to study. As we gain knowledge of the learning process we become increasingly aware that it is largely specific in character; that is, that each subject and each main type of content in each subject has its peculiar methods of study. To attempt in the scope of this book to summarize these, in so far as they have been discovered, is out of the question. It is impracticable even to deal adequately with those aspects of the problem which may be thought of as general. We may, however, by way of illustration, refer to the effort in one junior-high-school situation—that in Rochester, New York—

¹ Key to initials: R, recitation; A, assignment; S, study; T, test; O, other activities.

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to ascertain the extent to which training of certain general sorts was necessary, and to institute a program to remedy the deficiencies found.¹ The larger purposes of the tests were (1) to make entering junior-high-school pupils aware of certain things they ought to know about studying, and to create a desire for instruction in the best way of studying, and (2) to suggest to teachers both class needs and individual-pupil needs as the basis of possible and desirable lines of instruction. There were four tests, of which the specific purposes were as follows: (1) to ascertain whether the pupils could select information from the printed page in response to questions; (2) to ascertain whether the pupils knew the meaning of certain expressions found in the text and used by them in their answers to the questions in the first test; (3) to find out whether pupils knew how to use such parts of a book as the table of contents, index, list of maps, appendix, reference to footnotes, lists of general references, and paragraph headings; (4) to challenge attention to the need of (1) ability to select the important things told in a paragraph, (2) ability to write intelligent questions about a paragraph, and (3) ability to collect information suggested by a simple outline.

Large proportions of pupils were found deficient in the matters tested. For example, almost three fifths did not make use of the table of contents, almost a half failed to use the index, more than a fifth could not locate the appendix, and more than a fourth had no idea of the real meaning of a footnote. Given such a situation, remedial training is necessary. It is necessary likewise for the specific learning abilities essential to success in subjects of study which it is one of the larger obligations of directed study to impart.

¹ Charles E. Finch, "Junior-High-School Study Tests," *School Review* (March, 1920), Vol. XXVIII, pp. 220-226.

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THE PROJECT AND PROBLEM

Definition and illustration of the project. An often-quoted definition of the project is that by Stevenson, who referred to it as "a problematic act carried to completion in its natural setting." In his amplification of the definition he said : ¹

In this definition note that (1) it implies an act carried to completion as over against the passive absorption of information; (2) it develops the problematic situation demanding reasoning rather than merely the memorizing of information; (3) it implies, by emphasizing the problematic aspect, the priority of the problem over the statement of principles; and (4) it makes provision for the natural setting of problems as over against an artificial setting.

In further explanation of the phrase "natural setting" he said that it "means that the situations undertaken in school are not essentially different because they are problems taken up in school from what they would be were they to come up in life outside the school." ²

Woodhull, in discussing the project method in science, referred to it as "merely the method of research adapted to the age and capacity of the individual," and indicated that he looked upon it as analogous to the projects worked upon by great scientists.³ In another place the same writer differentiated the *project* from the *topic*, with which in school practice it is often confused, as follows : ⁴

A *project*, or *problem*, differs from and is superior to a *topic* in that (1) a project originates in some question, and not in such

¹ J. A. Stevenson, "The Project in Science Teaching," *School Science and Mathematics* (January, 1919), Vol. XIX, p. 57.

² *Ibid.* p. 59.

³ John F. Woodhull, "The Project Method in the Teaching of Science," *School and Society* (July 13, 1918), Vol. VIII, pp. 41-44.

⁴ John F. Woodhull, "The Aims and Methods of Science Teaching," *General Science Quarterly* (November, 1917), Vol. II, pp. 249-250.

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a logical sequence of ideas as may be found in codified subject matter. In teaching from the so-called "logical" tests, one wrongly attempts to induce pupils to accept topics as their own projects. Logical organization of such material as functions in life will be the final result of a protracted study of projects. (2) The project involves the active and motivated participation of the pupil in carrying it out. It does not, therefore, like a topic, lend itself to didactic, formal treatment in which the teacher does all the thinking and the pupil passively absorbs. (3) Projects furnish a basis for the selection of facts according to value or significance; topics furnish no such basis for selection. (4) The project seldom ends in a complete, final, or absolutely finished conclusion.

In its earlier usage the term "project" was applied to enterprises involving handwork. The concept has in late years broadened out to include also problems not involving the handling of concrete materials.

In a discussion of the distinction between *project* and *problem*, Trafton states that he sees little difference except in the manner of statement. Continuing the comparison, he says: ¹

So far as there is a difference, it might be simply that the project suggests more definitely the activity involved. . . . A teacher who is using the problem method . . . is using the same fundamental principles as the teacher who is using the project method.

The same writer, illustrating projects in science, lists the following: ²

MAJOR PROJECT: To see what advantage each of the following methods of heating our homes possesses: hot air, hot water, and steam

¹ Gilbert H. Trafton, "Project Teaching in General Science," *School Science and Mathematics* (April, 1921), Vol. XXI, p. 320.

² *Ibid.* pp. 321-322.

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MINOR PROJECT

A. Home project

- a. To make a study of the heating system [of the home]

B. Laboratory projects

- a. To prepare oxygen and study its properties
- b. To study the burning of wood, soft coal, and hard coal
- c. To compare safety matches and ordinary matches

C. Demonstration projects

- a. To study the principles applied in the hot-air furnace
- b. To study the principles applied in hot-water heating
- c. To study the source of heat in the steam-heating system

As indicative of the types of project that may be performed outside the schoolroom, he cites the following:

1. Home projects

- A. To read the gas meter and learn the weekly cost of the gas used
- B. To store eggs for winter use
- C. To beautify the home by means of house plants
- D. To raise early vegetables

2. Community projects

- A. To investigate local conditions with reference to the water supply
- B. To learn how the class can help control the fly nuisance
- C. To see if our shade trees are properly cared for

3. Field projects

A. Nature trips

- a. To learn to name some of the common constellations of stars
- b. To learn what beneficial birds are common in your locality
- c. To study those shrubs and vines that are adapted for growing in the home grounds

B. Industrial trips

- a. To visit the central telephone office
- b. To visit a moving picture theater to see how the projecting apparatus works

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Distinction between projects in elementary schools and junior high schools. In presenting certain new materials of instruction, many of them of the project type, gathered from junior high schools, Lull set down a principle of distinction between projects for elementary schools and for junior high schools, which is well worth keeping in mind. In discussing the projects he stated his impression that those submitted from junior-high-school grades are essentially like those submitted from the grades below. He believed that this was owing in part to the fact that many of these projects came from seventh, eighth, and ninth grades which had not at the time been included in junior-high-school reorganization, and also to the fact that much of the teaching in junior high school still adheres to the content and procedure characteristic of unreorganized schools. He continued:¹

This lack of change in harmony with junior-high-school aims is shown by the records of many projects, the assigned purpose of which is to provide motivation for the various subjects of the school. While such a project attitude is entirely appropriate for the primary grades, *the situation should be, for the most part, exactly reversed in the junior high school. Here the projects should be the important matters and the several school subjects should occupy a position of secondary importance, except in so far as they are needed as tools in working out projects.*² . . . A conservative statement of the matter would be something as follows: The outcomes of the project method of learning in the primary grades, and to a lesser degree in the intermediate grades, should require the development of by-products in the technics of reading, writing, spelling, numbers, etc. The projects of the junior high school, on the other hand, should require the use of the

¹ Herbert G. Lull, "New Materials [of Instruction] for the Junior High Schools," Twentieth Yearbook of the National Society for the Study of Education (1921), pp. 114-115.

² The italics are the present writer's, not those of the author.

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technics of reading, writing, language, number combinations, and the like, in working them out. The projects of the junior high school should, therefore, be more valuable in themselves and only indirectly valuable as means of securing by-products in the school skills.

Limitations of the project method. As with many innovations in teaching procedure and in other aspects of education, the project has in some instances been "exploited, abused, misnamed, and run into the ground." This is the view of Charters, who, announcing himself as a "firm believer" in the use of this method as one that "will take its place among the great instruments of educational practice," points out five of its limitations.¹ The first is that (1) if it is used exclusively as a method of instruction, there is danger that all the skills needed for efficiency both in youth and in adult life will not be sufficiently recognized in the training program. (2) This defect suggests the second, that "there has not yet been presented a system of projects so completely dovetailed that they give both the kind of information and skill and the amount of repetition which is necessary for efficient retention." This calls for the recommendation of supplementation of projects by drills. (3) The project does not of itself supply all the "systematic logical organization of subject matter" desirable. Instruction by projects may well be supplemented along this line. (4) "There is not time to teach everything by the project method." Much information learned in the ordinary way will need to be added. (5) There has been the failure to recognize the fact that "projects must conform to natural conditions in order to be projects." This has led to the development of "an infinitely hazy conglomeration of projects, problems, and exercises." Charters

¹ W. W. Charters, "The Limitations of the Project Method," *Vocational Education Magazine* (April, 1923), Vol. I, pp. 568-570.

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insists that for the problem to be a project it must parallel out-of-school situations. The manner of statement of these limitations is quite clearly constructive; if they are consistently kept in mind in teaching, they will enhance the value of the project method and at the same time counteract any negative influence arising from overuse.

The project method in English composition. Illustration of this procedure thus far in this section dealing with it has been only by the titles suggested by Trafton for some projects in general science. It is desirable to describe at somewhat greater length the techniques within the procedure itself, such as are involved in launching the projects and carrying them forward. This will be accomplished by drawing on materials made available by Hatfield and pertaining to English composition.¹ The "typical features" of the project procedure, as Hatfield sees them, are the following:²

The pupils face a situation, form a purpose, lay plans for executing that purpose, carry out their plans with tongue or pen, and finally judge their own performance. Thus the pupils are the chief actors: they will, they choose, they judge, at every step in the process.

Two of this writer's examples of projects conforming to these principles are reproduced in brief here. The first was worked out in a junior-high-school class which had been allowed one month to choose their home reading without advice by the teacher. At the end of the month the teacher put up to the pupils the problem of suggesting books to be purchased by the teacher as Christmas presents for a boy and a girl of about their own age with whose

¹ W. Wilbur Hatfield, "The Project Method in Composition," *English Journal* (December, 1922, and January, February, and March, 1923), Vol. XI, pp. 599-609, and Vol. XII, pp. 11-23, 107-116, 173-179.

² *Ibid.* p. 607.

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family she had stayed a while during the last summer vacation. She proposed that they write about the book recommended in such a way as to lead her to buy it for one of her young friends. She stated that she did not promise to buy any of the books recommended, but thought that they might help her to find what she needed.

The pupils, glad to be of service to their very human teacher and stimulated by the prospect of a contest, readily agreed to this proposal. Then followed statements by several of the pupils of the exact aim of the talks they were to give the next day. The remainder of the class hour was given to a discussion of the best means of presenting the books — general evaluation, summary of the plot, or a full retelling of one typical incident.

On the following day as each pupil made his report, the teacher listened with a book-buyer's ear. Frequently she asked questions which sprang from this point of view. After each talk the class — the teacher acting as chairman, but joining in the discussion — considered how well the report was adapted to convince the teacher of the merit of its book as a gift. Most of the criticism had to do with subject matter, but some of it concerned forms of expression and manner of delivery.¹

Commenting on this procedure, Hatfield said:

The foregoing may properly be called a project in the sense of a pupil-undertaking. The teacher, it is true, proposed the activity, but the pupils felt the proposal as a suggestion rather than a command. They willed to help her or to enter into a contest in book-boosting rather than bowed to her will. As a result they exerted themselves freely and fully, without that internal friction which so frequently makes good work impossible. The concreteness and immediacy of the aim secured effective performance. One observer remarked, "Why, those talks did not seem like *themes* at all."

¹ W. Wilbur Hatfield, "The Project Method in Composition," *English Journal* (December, 1922), Vol. XI, pp. 599-600.

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The second project is presented by reproducing it exactly as described by the author:¹

High-school Seniors were shown a *Saturday Evening Post* cover which represents a florid middle-aged man in golf costume with his bag placing a sign "Gone on important business" on the door of his office. Through the partly closed door can be seen his desk all littered with papers upon which the wall motto "Do it now" looks down with a wink. On the desk sits a vase of spring flowers. The pupils were asked who the man is, what his business is, whether he often leaves it, who will come to the door and read the sign while he is gone. By this time almost every pupil had a story plot formulated, and all were ready to accept the suggestion that they entertain each other with them. When asked how the matter could be managed best, they said, "Let us write. We can say it better." It was so ordered, with the understanding that each pupil should have the privilege of reading at least three of the papers. This automatically provided an audience for each writer. Probability of action and consistency of character were recommended by the class as necessary to the highest success. Someone remembered that the use of dialogue brightens up a narrative. When the pupils were asked if they all knew how to put dialogue on paper a few confessed their uncertainty. Models were put on the board by some who thought they knew, and a satisfactory one approved. Then each was left to outline his story in more detail. Finished stories were brought to class next day. First all were asked to proofread their manuscripts for dialogue form and again for comma punctuation. Then the papers were passed one place to the left for reading and pencil comment. At intervals of five minutes this operation was repeated twice. The comments, of course, concerned the subject matter chiefly, but there were many suggested grammatical and rhetorical changes scattered over the papers. Finally the stories were collected and three chosen for reading aloud the next day. These were discussed to discover wherein they were better than the others. In addition . . . naturalness of dialogue and vigor of diction seemed their most notable qualities.

¹ Ibid. pp. 602-603.

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The fact that, as in these instances, suggestion by the teacher is usually essential to launching a project does not seem to Hatfield derogatory to its value as a method. It is his opinion that "the teacher must directly or indirectly play the part of a leader. The pupils must purpose, but usually the teacher must stimulate them to do so."¹

In his advocacy of the project method in composition this writer goes so far as to contend that it is applicable not only in gaining considerable fluency in expression, but also in developing correctness of form, this being true just because the pupils have found a need for the language tools. This is not to say that drill may not be necessary to attain efficiency in these mechanical matters, but he believes that learning the mechanics may be "permeated by the same spirit which animates the expressional enterprises." In this point of view he appears to be at variance with Charters as cited above, the difference being that Hatfield is of the opinion that the drill aspects can be motivated by means similar to those used in stimulating other kinds of performance.

Referring to the origins of the project method as he has formulated and explained it in application to composition, this writer suggests that it "probably contains not a single new idea. If it were more revolutionary, its ultimate value would be more doubtful. Being really only a synthesis of the best things that experimenters with children have discovered in generations of teaching, it is probably at least safe. If, as seems the case, it includes all the important reforms which have been accepted by thoughtful, well-informed teachers, it is the best procedure yet worked out."²

¹ W. Wilbur Hatfield, "The Project Method in Composition," *English Journal* (January, 1923), Vol. XII, p. 11.

² *Ibid.* pp. 173-174.

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SOCIALIZATION

Socialization often loosely defined. The lack of definition and of consensus in practice referred to near the opening of the present chapter is probably even more characteristic of socialization — the “socialized recitation” — than of any of the other methods of teaching being considered. It has been as much affected by the influence of faddishness as any other, and suffers also because of the generality of the term applied to it. In practice it ranges everywhere from the most pitiable artificial formalizations of procedure in the superficials of education to serious and meritorious efforts to utilize social motives in a genuinely social situation. It is therefore even more necessary in discussing or evaluating socialization than in discussing the other procedures to have in mind some particular practice which has been given this name.

An experiment in socialization. The example here to be presented is one in which the features of the method were painstakingly set down.¹ It was carried out as part of an experiment in the teaching of written composition, the purpose of which was to compare the results of the socialized method and of the “academic,” or traditional, method. These two methods were described as differing in the following respects: (1) the nature of the situations in which the learners are placed, (2) the nature of the problems growing out of the situations, (3) the form in which the themes are written, (4) the nature and amount of publicity given, (5) the control and direction of the attention of the learner, and (6) the nature of the stimuli which drive the learner to make the best use of his practice period. In the experiment the effort was made to keep all the

¹ C. J. Thompson, “A Study of the Socialized versus the Academic Method of Teaching Written Composition,” *School Review* (February, 1919), Vol. XXVII, pp. 110-133.

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important factors of learning the same, except those which the investigator regarded as inherent in the socialized method. These factors were as follows, the numbers arranged in the order just given :¹

1. Vitalized social situations which may be varied to sustain the interest of the learner.

2. Composition is primarily a social problem of communicating the thoughts and feelings of the learner.

3. The letter form appropriate for the occasion is the medium of communication.

4. The nature and amount of publicity given to the themes compel a higher type of response.

5. The attention of the learner is focused primarily on the problem of communication.

6. The following stimuli characterize the socialized method :

- a. The three dynamic social motives for communication : namely, the story-teller motive, the teacher motive, and the community-worker motive.

- b. The desire of the learner to interest, please, benefit, or convince a prospective reader in order to elicit praise and avoid censure.

- c. A keen realization that the best way to learn to communicate thoughts and feelings in correct, fitting, and effective speech is to practice in a vitalized social situation.

- d. Consciousness of the utility and satisfyingness of the procedure.

- e. Social realization.

Although it is not the major motive in this treatment of innovations to attempt their evaluation, the findings of this experiment as they were seen by the investigator are deserving of summary. In the matter of mechanical errors in the two sets of themes written by the two classes, the class taught by the socialized method showed both a

¹ C. J. Thompson, "A Study of the Socialized versus the Academic Method of Teaching Written Composition," *School Review* (February, 1919), Vol. XXVII, p. 114.

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smaller number of errors per hundred words written and a larger extent of improvement during the period of time over which the experiment was conducted. Moreover, as measured on the Harvard-Newton Scale, the scores for general excellence of these themes showed larger gains for the class taught by the socialized method.

In the light of the lack of standardization of socialization already mentioned, it is, of course, inadvisable to conclude that similar results could be obtained without a similar make-up of what is called the socialized method. It is also apparent that this method as described in the quotation partakes of some of the same features as does the project method.

INDIVIDUALIZATION

Individualized teaching of English usage. The treatment here accorded individualization of teaching method draws largely upon two illustrations, the first having to do with the teaching of English usage in junior-high-school classes, the second being a description of practices in a secondary-school situation in which the procedures followed, according to the claims of the administrator in charge, combine several features of the Dalton plan and the Winnetka plan.

In the experiment in individualized teaching of English usage,¹ Edith E. Shepherd, who conducted it, reports that modifications from the former technique "were made chiefly with a view to creating conditions which would emphasize (1) the pupil's own need for the instruction given, or (2) his personal responsibility for using in all written work the principles and facts learned in the Eng-

¹ Edith E. Shepherd, "An Experiment in Teaching English Usage to Junior-High-School Pupils," *School Review* (November, 1925), Vol. XXXIII, pp. 675-684.

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lish class, and (3) the fact that all written work, whether in science, or geography, or art, or English, is equally valid evidence of this need for instruction in usage and of his mastery of the principles studied.”¹ In greater detail, the method is described as follows:²

1. Individualized instruction: no pupil studied any lesson unless he could be shown his personal need for it.

2. The mistakes made by each pupil in his written work determined the lessons assigned to him.

3. Evidence of mastery was considered to be subsequent correct use in written work. Test results were considered chiefly a basis for justifying the instructor in holding the pupil responsible for correct usage.

4. A record of the lessons needed and of the lessons studied was kept by each pupil for himself and by the teacher for each pupil.

5. Papers from science and geography classes were used as the basis of many exercises in usage.

6. Written work from science and geography classes was known by the pupils to be the basis on which the instructor judged pupil need and pupil progress in usage. Such papers were generally to be found on the desk of the English instructor.

7. The pupils who wrote accurately — that is, with few mistakes in usage — had few lessons in usage to study and consequently were frequently allowed to spend the class hour reading in the classroom or in the library. Sometimes they were even permitted to use the tennis courts for the hour. These privileges were valued highly.

8. The pupils knew that their instructors in English, science, and geography conferred about their written work. They saw these instructors in conversation, saw papers exchanged between the departments, found science and geography papers almost constantly in the English room, and were informed of the results of the conferences. One science instructor some-

¹ Edith E. Shepherd, "An Experiment in Teaching English Usage to Junior-High-School Pupils," *School Review* (November, 1925), Vol. XXXIII, p. 675.

² *Ibid.* pp. 676-677.

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times sent pupils to the English teacher for help in correcting mistakes which the pupils could not find for themselves. Co-operation of departments was made obvious to the pupils.

One may conclude from this description that the single important feature other than individualization represented in the method is that of applying the standards of usage to the written work in other subjects. In further description of the method it may be said that it required an elaborate system of records so that both pupil and teacher might know the lessons required and the work that had been studied and completed. There was specific study of usage lessons:¹

Mimeographed material designed for the purpose was used. It included about sixty lessons, each planned to teach some principle of good usage frequently violated by pupils. Each lesson explained the principle involved and included a series of exercises requiring the application of the principle. Most of the lessons were simple enough to be studied from the text without help from the teacher. This was essential because of the highly individualized instruction. Theoretically, during a given period all pupils in a class might be studying different lessons. Generally, however, it was possible to gather together a group of pupils all of whom had the same lesson at the same time. For example, the first science paper showed that a majority of the pupils needed to give some attention to capitalization. They either capitalized "solar system," "sun," "moon," "star," "comet," and practically all important nouns or failed to capitalize such proper nouns as "Mars," "Saturn," etc. A few pupils, however, had not made mistakes in capitalization but had made mistakes of other kinds. To each of these last-named pupils the instructor assigned a lesson, the easiest lesson on his list. . . .

When a pupil had finished the exercises, learned the principle, and felt that he understood it, he was permitted to take a test to prove his understanding and to justify the instructor

¹ Ibid. pp. 678-679.

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in holding him responsible for the correct usage in future work. . . . If the test was not satisfactory, the points of difficulty were explained; further exercises were given; and a retest was required.

Obviously, under this individualized procedure some pupils had many lessons to study, and some had few. The length and content of the course differed greatly for different individuals. In order that pupils who needed little study of usage might employ their class time profitably, a literature unit was presented early in the semester. Books were made available in the classroom and in the library; reading suggestions were offered; and topics for special study were suggested. Pupils took pleasure in being released from work in usage and allowed to read or work on some voluntary project. . . .

Individualized instruction in all departments of a small high school. The secondary-school situation used as an example of the use of the individualized method is that in Bronxville, New York, as described by the superintendent of schools, A. J. Stoddard.¹ The essential feature of the method is that of the individual and personal check-up of the progress of each pupil. Under this method the attempt is made to place more responsibility on the child "and to make him feel that his school work is his and not the teacher's job." Subject matter is divided into assignments. As the pupil progresses through these assignments he is given practice tests which are diagnostic in character. During the time he is working through an assignment he may have personal conferences with the teacher. Whenever the final test is passed the pupil is given the next assignment. Class conferences are held several times during the week in each subject, these conferences offering opportunity for special reports, discussions, oral English, and other matters in which the whole group can participate.

¹ A. J. Stoddard, "Individualized Instruction in the Small High School," *The High School Teacher* (June, 1926), Vol. II, pp. 217-219.

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The pupil's work is done in "laboratories" devoted to the different subjects, the pupil being permitted to pass from one to another at will, except when some room is in use for a conference or is filled to capacity. Unless his class is in conference, he may stay as long as he wishes in a particular laboratory. Each morning he plans his day during the first fifteen minutes while in his home room with his home-room teacher, his plan being made out on his time card.

The author closes his description of the plan of instruction in Bronxville with the following estimate of its value:¹

It is surprising to learn that there is an immense, untapped source of motivation in the acquiring of facts, knowledge, and skills if the task is clearly, definitely, and concisely set before the child in terms that he is able to understand and within the reaches of his ability to master. A great deal of our necessity for motivation of our school work has come about from the procedure by which we expected the child to learn. We have been doing too much for the child and not expecting enough of him. It is surprising how quickly he demonstrates that he is eager and willing to accept responsibility if he is asked to assume it.

THE INTERRELATIONSHIP AND SIGNIFICANCE OF THE INNOVATIONS

The interrelationship of these variations from conventional procedures. During the perusal of the exposition and illustration of the types of innovation in teaching procedure which have been reviewed in foregoing sections of the chapter, it must occur to many readers that we have in directed study, the project method, socialization, and individualization not four distinct types, but procedures that partake generously of each other's features. For

¹ Ibid. p. 219.

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example, directed study may sometimes properly draw on the project method, and, reciprocally, it is often natural in carrying out a project to have recourse to the method of directed study. Again the project is often one kind of socialization, and directed study will often, indeed, be indistinguishable from individualized teaching and individualized teaching from directed study. This is not to say that the methods are identical, but that they have made use of common elements.

The single exception to this marked overlapping is in the relationship of socialization and individualization to each other. Offhand the names suggest that each is the antithesis of the other. This impression is partly borne out by the detailed descriptions of these two procedures quoted above from Thompson¹ and Shepherd.² The antithesis is not complete, however, since individualized assignments are often made in following the socialized method, and since social motives are sometimes utilized in individualized teaching. The contrast is, however, sufficiently marked to prompt schools operating on the individualized basis to compensate for it by special efforts to provide opportunities for socialization, the endeavor being to maintain the "individual-social balance."

This overlapping in the features of these innovations in procedure is an important factor in the confusion of definition of method now obtaining. At the same time it argues for recourse to a composite of methods rather than to a single method only.

One thing all these innovations have in common is the

¹ C. J. Thompson, "A Study of the Socialized versus the Academic Method of Teaching Written Composition," *School Review* (February, 1919), Vol. XXVII, pp. 110-133.

² Edith E. Shepherd, "An Experiment in Teaching English Usage to Junior-High-School Pupils," *School Review* (November, 1925), Vol. XXXIII, pp. 675-684.

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potency claimed for them, in contrast with older methods, of motivation — of inducing the pupil to assume the responsibility of self-education. To the extent that this is true where they are used, this is a notable achievement, vital enough to warrant instituting them.

The significance of the innovations for the junior high school. No large amount of objectively obtained evidence has been gathered in support of the new procedures which are being reviewed in this chapter. Moreover, some of that which has been mustered, on account of the investigational techniques used, cannot be regarded as unequivocally positive. The presumptions, as these are expressed and implicit above, are, however, heavily in their favor. This is especially true when one considers them in relation to the junior high school. Thus, although directed study is appropriate on more than one school level, there is some special necessity for it in junior-high-school grades because of the widening spread of abilities there as reported in the discussion of individual differences in an earlier chapter. A similar statement may be made for the method of individualized teaching. Socialization may be seen to be especially appropriate for pupils in the early stages of adolescent development, while the social impulses are waxing. The project method also has already been seen to have particular meaning in these grades because of the stage of development of skills in the fundamental processes at which pupils are or should be: they can now apply these skills to projects that are important on their own account rather than as a means primarily to add to these skills. Moreover, group projects have a special appropriateness because of the development of the social impulses. The junior-high-school grades may therefore be quite fittingly regarded as a place of significant *transition* in method, as well as in content of the curriculum.

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The vital relation of innovation in method to achieving the peculiar functions is therefore readily apparent. The functions whose realization is immediately affected by improvement along these lines are economizing time, recognizing individual differences, recognizing the nature of the child at adolescence, providing the conditions for better teaching, securing better scholarship, and improving the disciplinary situation and socializing opportunities. There will be meaning also for exploration and guidance and, through adjustment of work to the needs of individuals, provision of the beginnings of vocational training. In turn, achieving several of these purposes should sometimes affect favorably the length of stay in school. The most significant contributions will, however, be toward the first group of functions listed.

These statements should not be accepted as a recommendation of full abandonment of older procedures. With all their defects, older methods cannot be assumed to be without value. They have all at some time been variants from procedures antedating them and have survived through trial and error the competition of method with method. Perhaps the safest practice is improvement by progressive and discriminating adoption and adaptation of the innovations rather than by sudden and complete relinquishment of traditional methods.

QUESTIONS AND PROBLEMS

1. Illustrate the intimacy of the relationship between content and method.
2. To what extent do you consider it appropriate to assume that it is the responsibility of the school to supervise the junior-high-school pupil while he teaches himself?
3. How would the laboratory method in English composition differ from directed, or supervised, study?

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4. Discuss the advisability of adopting as a standard procedure in a junior high school some one of the sequences of the different types of activity listed in Table XXXIII.

5. Is it out of the question to arrange projects for class work in systems where the course of study is outlined grade by grade on assumptions of conventional teaching methods?

6. Cite examples of spurious and genuine socialized teaching which you have observed.

7. What is the teacher's rôle in a socialized exercise or recitation for which pupils have assumed responsibility?

8. Is it possible to overdo individualization in junior-high-school grades?

9. What elements of each of the innovations in methods of teaching are represented in the illustrations cited in this chapter, other than the particular innovation under which it is classified?

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XI

THE ADVISORY SYSTEM

THE NEED AND SCOPE OF GUIDANCE

Guidance one of the dominating concepts in the junior high school. A good deal has been made at earlier points in this book of the concept of guidance as it relates to the junior high school. Exploration and guidance was indicated as an important function of reorganization, both in Chapter II, where it was first treated, and near the close of Chapter III, in the discussion of the relative importance of the several peculiar functions. It was kept in mind and referred to a number of times in the treatment of the program of studies and the several subject groups in Chapters V, VI, and VII. Certain writers on the junior high school are disposed to regard it as the controlling purpose of the new unit. For example, Smith goes as far as to say that "guidance . . . is the very keystone of the junior-high-school idea."¹ The junior-high-school manual for the commonwealth of Pennsylvania states that "guidance . . . is the *primary* purpose of the junior high school."² Even if one does not accept guidance as the sole controlling purpose of the junior high school, it must be placed among the few most important purposes. Its prominence calls for a generous program of advice and guidance.

¹ William A. Smith, *The Junior High School*, p. 377. The Macmillan Company, 1925.

² *Manual for Junior High Schools, Bulletin No. 14*, p. 82. Department of Public Instruction, Commonwealth of Pennsylvania, 1925.

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Guidance inevitable. Guidance of some sort is inevitable. In some way or other, whether on personal choice or not, workers are distributed to occupational life. Moreover, something must determine such occupational preferences as those of the thirteen-year-old boys and girls of Springfield, Illinois, represented in Tables IV and V, pp. 45 and 46. If the school is without influence, the determining factors reside elsewhere. It is, however, a matter of great moment that the working population be distributed to occupations and that elective work in the school program be chosen on as broadly intelligent a basis as possible; to this end the school should have a significant bearing on these questions.

In this connection it may be well to state to those who present the traditional objection to encouraging early choice of occupation, that our concern is more with providing the intelligent basis of choice referred to than with stimulating early final decision on one's life work. Early choice will be necessary only for those over-age pupils who will drop out of school before completing senior-high-school work and for whom it may be necessary to advise entrance upon a vocational-training program before they sever their connection with the school. For others any selection made must be regarded as no more than tentative. But possibility of delay in final choice for these cannot absolve the school from responsibility for providing the broader basis of choice whenever it is made.

The widening concept of guidance. The concept of guidance usually held comprehended until recently only the two phases which have been so far specifically mentioned in this treatment, — advice in selection of courses and in choice of occupation. These are often referred to as curriculum, or "educational," and vocational guidance. Of late, however, the concept has been much widened.

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This fact has already been reported in Chapter II in the discussion of the function of exploration and guidance.

One hears increasingly not only of curriculum and vocational guidance, but of health (or physical), avocational, cultural, civic, social, and moral guidance. With some writers the concept now extends over the entire gamut of aims in education. In fact, in some quarters it has been so *widened as to be essentially synonymous with "education."* An instance of this tendency is to be found in the statement that "in junior-high-school literature the term 'guidance' has come to stand for the principle that lies back of all worth-while teaching of adolescents, namely, the well-rounded development of the individual through the wise direction of his activities."¹ Another instance occurs in the opening paragraph of a chapter on "health guidance" in the junior high school, in which the assertion is made that guidance in health includes health inspection and follow-up, physical training, and instruction and habituation in the principles of right living.²

There can be little doubt that the term "guidance" used in this sense will have a beneficent influence on the training program. There can be no question, moreover, that the concept had need of extension to include more than curricular and vocational guidance. At the same time, as suggested in Chapter II, one may properly inquire whether there is not the danger of losing sight of advice and guidance in the more specialized sense. It is essential that, while generalizing the concept, we make sure of rendering the services conceived of under its older meaning.

In the remaining portions of the chapter discussion will

¹ R. L. Lyman, "The Guidance Program of the Holmes Junior High School," *School Review* (February, 1924), Vol. XXXII, p. 93.

² Louis A. Pechstein and A. Laura McGregor, *Psychology of the Junior High School Pupil*, p. 245. Houghton Mifflin Company, 1924.

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center around advice and guidance in the narrower sense and not as synonymous with education nor fully coincident with the entire educative process as it pertains to children of the ages represented. It will have to do largely with guidance in matters (1) curricular, (2) vocational, and (3) disciplinary and social.

Disciplinary and social guidance. The addition of the third group of concerns, the disciplinary and social, for the purposes of this chapter extends the scope of the concept of guidance in one significant direction beyond its earlier confines. The inclusion of this phase, in a treatment of the program of advice and guidance in the junior high school, is justified by what appear to be the special needs, in disciplinary and social matters, of pupils of junior-high-school age.

Although needs in these matters have often been felt to exist by those responsible for the training of pupils of these ages, we have had little acceptable evidence in proof. Partial corroboration of this opinion has recently come to hand in an investigation by Olson into the measurement and incidence of behavior problems and problem tendencies in children.¹ Evidence along two lines only will be drawn from this study. The first concerns the median scores by grade and by chronological age of children on a "behavior-rating scale," of what is known as the graphic type, devised to measure problem tendencies in children. This scale listed thirty-five traits distributed to four groups designated as (1) intellectual, (2) physical, (3) social, and (4) emotional. Illustrative of the first group is the following question: "Is his attention sustained?" The teacher making the rating is directed to check that one of five

¹ Willard C. Olson, *The Measurement and Incidence of Behavior Problems and Problem Tendencies in Children*, a doctor's thesis on file in the Graduate School of the University of Minnesota, 1926.

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descriptive phrases which is most appropriate for a given child. These phrases for the question just quoted are as follows: "distracted — jumps rapidly from one thing to another"; "difficult to keep at task until completed"; "attends adequately"; "is absorbed in what he does"; and "able to hold attention for long periods." For the physical group one may cite the question "Is he slovenly or neat in personal appearance?" The phrases for this question are "unkempt, very slovenly"; "rather negligent"; "inconspicuous"; "is concerned about dress"; and "fastidious, foppish." Questions illustrative of the third and fourth groups are, respectively, "Is his behavior (honesty, morals, etc.) generally acceptable to ordinary social standards?" and "Is he easily discouraged or persistent?" Score values of 1 to 5 are assigned to the five descriptive phrases under each question, 1 to the most desirable, and 5 to the least desirable as determined by the amount of the trait possessed by problem children. The theoretical score range is 35 to 175, since if a pupil were assigned the highest rating on all traits, he would have a score of 35, and if he were assigned the lowest rating on all traits he would have a score of 5 times 35, or 175. It probably does not require mention that a score near the lower limit indicates a relatively low problem tendency and that a larger score indicates a relatively larger problem tendency.

The median scores, correct to tenths, of the pupils represented in Olson's study for each grade from the first upward were Grade I, 63.4; II, 65.0; III, 65.0; IV, 61.1; V, 67.9; VI, 63.7; VII, 72.3; VIII, 70.3.¹ Although these measures show considerable fluctuation from grade to grade, their general trend from the fourth grade upward is

¹ Willard C. Olson, *The Measurement and Incidence of Behavior Problems and Problem Tendencies in Children*, p. 119, Table XXXIV.

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toward greater problem tendencies. The scores are larger in both seventh and eighth grades than in any lower grade. The median scores for boys and girls for each *chronological age* from six to fifteen years were as shown in Table XXXIV and Fig. 24. The median scores for boys are usually higher than for girls. These measures also disclose fluctuation during the earlier years represented. However, from the tenth year of age for boys and the eleventh year of age for girls the trend is notably toward higher scores, this being in accord with the facts reported concerning scores by grade.

TABLE XXXIV. MEDIAN SCORES ON BEHAVIOR-RATING SCALE
FOR EACH CHRONOLOGICAL AGE ¹

SEX	CHRONOLOGICAL AGE									
	6	7	8	9	10	11	12	13	14	15
Boys	62.5	67.5	67.5	67.5	62.0	67.5	72.5	71.4	80.0	92.5
Girls	54.4	58.6	63.8	57.9	64.7	60.3	62.5	65.0	65.0	78.0

The second type of evidence is that cited by Olson from the reports of the Juvenile Court of Hennepin County, Minnesota, which indicate the distribution by grade and age of children brought as delinquents to this court. The average frequencies for the grades from the first upward for the four years 1920 to 1923, inclusive, are Grade I, 2.8; II, 16.0; III, 23.8; IV, 47.5; V, 61.5; VI, 75.8; VII, 101.0; VIII, 77.3.² The increase in frequency is almost steady until the seventh grade. The frequency drops for the eighth grade, but is still a little higher than

¹ Willard C. Olson, *The Measurement and Incidence of Behavior Problems and Problem Tendencies in Children*, p. 125, Table XXXVII.

² These and the following averages were computed from data appearing in the Report of the Juvenile Court of Hennepin County, Minnesota (1920-1923), p. 15.

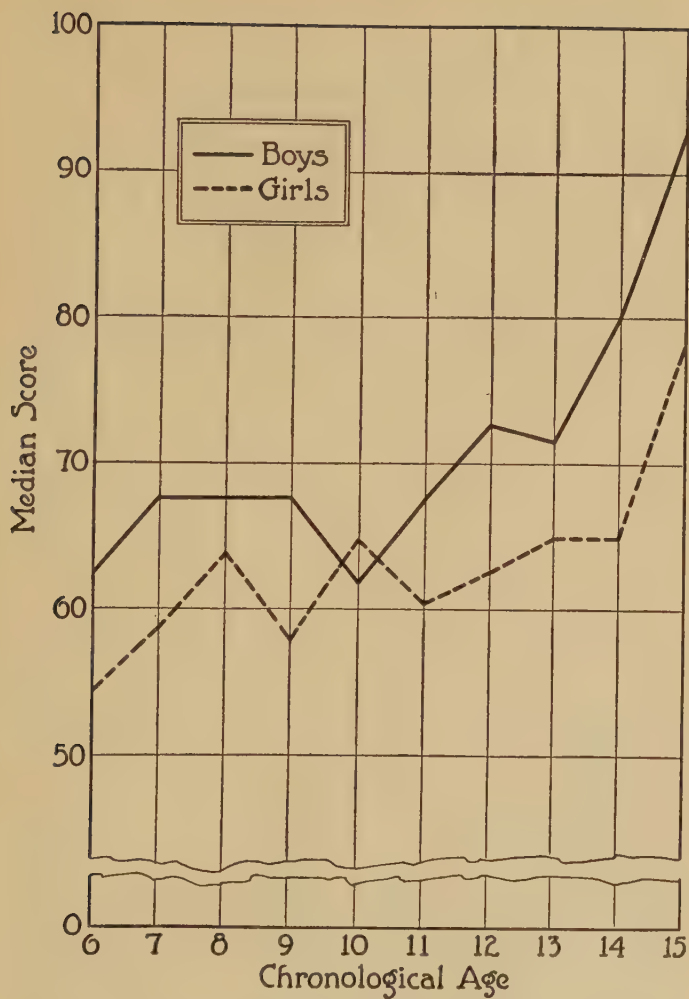


FIG. 24. Median scores on the behavior-rating scale for each chronological age (from Table XXXIV)

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for the sixth grade. When presented by chronological age the average frequencies are as follows: seven, 3.3; eight, 10.5; nine, 20.0; ten, 35.8; eleven, 46.3; twelve, 70.8; thirteen, 91.5; fourteen, 124.5; fifteen, 172.3; sixteen, 141.0; seventeen, 147.8. These data are in approximate accord with the average frequencies by grade.¹

Both types of materials, those dealing with problem tendencies and those concerning delinquency, suggest a larger incidence of behavior problems in the region of junior-high-school grades than below. They appear to be in harmony with the characteristics of the early adolescent as suggested in Chapter III, and lend support to the recommendation that the program of guidance during this period should include a recognition of disciplinary and social matters and not be restricted merely to the curriculum and to occupation. It is clear, however, that this type of guidance may well begin in earlier grades of the school system.

Relation of the program of guidance to the peculiar functions. It requires only brief consideration of the relation of the program of advice and guidance to the junior high school to understand that it has important contributions to make to achievement of the peculiar functions of that institution. One first naturally associates it with exploration and guidance. But if the shading in the column for Feature 8 in Fig. 18 (p. 131) is accepted, it has a high degree of influence in achieving almost all the other special purposes listed. Passing by retention for the moment, we are warranted in concluding that the pupil's time will be economized by selecting work suited to his needs. Through the exploration which this feature implies his individual differences may be better recognized and his education —

¹ Report of the Juvenile Court of Hennepin County, Minnesota (1920-1923), p. 129.

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vocational, avocational, or other—may be more wisely planned. The counsel to be given him will be in matters in which his interests at this stage of life are centered. His conviction of the value of the variables he selects in the light of the advice he receives should help to motivate his work in those subjects, and will aid in securing more earnest efforts on his part and in providing in some measure at least the conditions of better teaching. The disciplinary situation and socializing opportunities will also be improved for him. Several of these, in turn, will encourage a longer stay in school.

MEANS AND METHODS

Examples of programs of guidance in junior high schools.

1. In an exposition of the plan of guidance in the Washington Junior High School in Rochester, New York, Miss McGregor refers to its two main phases as "instructional guidance" and "advisory guidance." These are described as follows:¹

Instructional guidance in general parallels the work of the school courses, and serves to interpret to the child the direct training experiences of his school life in terms of their vocational outlook. Prior to choice of course, a sixty-minute period once a week is set aside in all class programs for a definite study of the various curricula of the school, the contents of each, the educational outlets of each, and the vocational fields toward which each points. In classes where the initial choice has been made, the guidance hour is devoted to a further study of occupations and of the opportunities for training afforded by higher schools and institutions. All classes take under consideration certain fundamental economic and ethical problems. A series of guidance lessons should function in increased desire

¹ A. Laura McGregor, "A Program of Educational Guidance in the Junior High School," Eighth Yearbook of the National Association of Secondary School Principals (1924), pp. 60-61.

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for education, in broader vocational knowledge, and in the establishment of ethical attitudes essential to true success. . . .

Advisory guidance or individual counseling necessitates an intensive study of the individual. This can only be accomplished through the coöperation and interest of the entire faculty of the school. The home-room teacher, the class instructors, the club director see the child in different relations and aspects and their contributions are essential if the counselor is to proceed wisely. In addition, the counselor, through the use of questionnaires, through examination of intelligence and achievement records, through personal conference, and through home visiting, endeavors to round out the available knowledge of the child with those details necessary to a sympathetic understanding of his problems. Children and parents welcome the assistance of a trained counselor in planning educational and vocational training, and the counselor serves to establish a close connection between the school and the community. The school counselors are actively concerned with educational placement and adjustment, with prevention of school leaving whenever possible, and with the study of all that relates to the progress of the individual child.

2. The program of guidance in the Latimer Junior High School of Pittsburgh has been reported as including a large number of features.¹ (1) Pupils are classified by their intelligence quotients. (2) There are try-out opportunities, including experiences in the general shop with woodwork, wood-turning, printing, metal work, and electricity. Girls have sewing and cooking. Four curricula are provided, namely, commercial, technical, vocational, and academic, with freedom for shifts permitted from one to another. There is rotation of shop work in the technical courses, ten weeks being spent on each type of work. (3) A course in vocational information is a required part of the work in

¹ Dana Z. Eckert, "The Vocational and Educational Guidance Program of the Junior High School," *Industrial-Arts Magazine* (August, 1922), Vol. XI, pp. 219-229.

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the ninth grade. (4) A part of the work in English deals with vocational choices. (5) Conferences of pupils with teachers are provided for. (6) A vocational counselor is employed who works through personal conferences, visits to elementary schools, etc.

3. The program of guidance recommended by the Manual for Junior High Schools issued by the Department of Public Instruction in Pennsylvania is described under five captions.¹ (1) This program calls for the *administrative direction* of all guidance activities by the principal or an associate specifically delegated to administer it. (2) The *guidance staff* is to be composed of the principal, the associate in charge of the guidance program, special counselors or advisers, home visitors, guidance-class instructors who have charge of guidance periods, and other faculty members to whom special guidance activities are assigned. (3) Personal, social, and moral guidance center largely in the *home-room teacher*. (4) There should be close *articulation* of all classroom instruction and of all school activities with guidance objectives. (5) Much emphasis is laid on *guidance-class instruction*. This work should include a study of all junior-high-school courses, electives, and curricula as to content, objectives, and outlets; the "conscious interpretation by the pupils of the actual value to themselves of all school work"; a study of senior-high-school curricula as to content, objectives, and outlets; a similar study of evening-school and continuation-school offerings; a survey of the fields of vocations; a bibliography of books containing guidance information adapted to early adolescent minds, with close articulation of the library with this phase and other phases of the guidance program.

The range of guidance activities available. It is apparent from the examples of guidance programs that a large

¹ Pp. 82-84.

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number of means are at hand for the work of guidance in the junior high school. It should prove helpful at this point to relist the means of guidance, with the endeavor to present a more nearly complete catalogue and to place them in something approaching a systematic order. There are first those that may be thought of as curricular in character. Here is included (1) the type of program of studies considered in Chapter V. The organization may be such as to encourage or to defeat the purpose of guidance. Under this head, also, are (2) the exploratory, or try-out, possibilities of courses in the program of studies, not only in the variables or electives but in the constants as well. These possibilities were considered in Chapters VI and VII. Here must be mentioned again (3) the course on vocations, often referred to as "vocational civics" or the "life-career course." This material is sometimes in whole or in part worked out in connection with English composition. (4) Excursions or field trips to industries and related activities may be included here.

A large and rather diverse group of activities that can be made helpful in guidance may be designated as extra-curricular. Here must be considered (5) the extra-curricular, or allied, activities proper, such as clubs, musical organizations, school publications, and other school activities. These come in for treatment in the following chapter. In a recent article Kitson has stressed their rich possibilities for the guidance program.¹ He has also called attention to the guidance values of (6) the extra-school wage-earning activities in which pupils engage before and after school hours and on Saturdays. It is appropriate to list here (7) the talks or conferences conducted on some occupation or group of occupations by some local leader in the special

¹ Harry D. Kitson, "Extra-Curricula Activities as a Means of Guidance," *Vocational Guidance Magazine* (May, 1926), Vol. IV, pp. 357-361.

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field. The speakers in such a plan must be carefully selected if the presentations or conferences are to have any value. (8) The home-room plan may be made one of the most valuable means of guidance. (As sometimes conducted it is not properly classifiable as extra-curricular in the strict sense.)

Another large group of means of guidance is included in (9) the results of tests of various kinds, such as intelligence, prognostic, and achievement tests. Associated in one's mind with these are (10) the judgments of personal traits, made preferably on a graphic rating scale similar to that used by Olson in the investigation referred to at an earlier point in the chapter, as well as (11) estimates of the social and economic status of the home from which the pupil comes. To be made useful these results and judgments must be entered on (12) record forms of a cumulative nature that will place before the adviser in convenient form all pertinent information. (13) The physical or health record must also be at hand. Other means will be (14) case studies, (15) conferences with the pupils concerned and with their parents, and (16) placement and follow-up.

This list is not complete, but contains most of those factors applicable to the junior-high-school situation. Among those least applicable is the last one named, which is more appropriate for the senior-high-school field. To the extent that pupils in junior high schools in large cities drop out, placement and follow-up for them is usually a concern of some central agency. In smaller communities the responsibility may sometimes devolve upon the junior high school.

Guidance as an individual or case-method problem. One matter requiring recognition in any treatment of the means and methods of guidance is that the decisions or adjust-

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ments to be made and upon which the advice and guidance must bear are all decisions or adjustments of individual pupils. This is true whether the problem is curricular, vocational, or disciplinary and social. Miss McGregor was quoted above as stating, in a description of the program of guidance in the Washington Junior High School in Rochester, that "the school counselors are actively concerned with educational placement and adjustment, with prevention of school leaving whenever possible, and with the study of all that relates to the *progress of the individual child*."¹ Some of the means of guidance used may be administered by group methods. Among these are try-out courses, courses in vocational civics, extra-curricular activities and the like. But even with these the application in decisions and adjustments must always be individual. It is awareness of this significant fact that has prompted the recent emphasis on the case-study method in guidance. Two reports in print of the use of this method are Reavis's "Pupil Adjustment"² and "Case Studies in Educational and Vocational Guidance," by Brewer and others.³

ORGANIZATION FOR GUIDANCE

The home-room organization. One feature of the organization for guidance which is almost universal in junior high schools is the home room, presided over by a teacher who is variously known as the "home-room teacher," "sponsor teacher," "teacher-adviser," etc. The responsibility of this teacher ranges from control merely of attendance and discipline of the group of thirty to fifty

¹ The italics are the present writer's, not the author's.

² William C. Reavis, *Pupil Adjustment in Junior and Senior High Schools*. D. C. Heath & Co., 1926.

³ John M. Brewer and Others, *Case Studies in Educational and Vocational Guidance*. Ginn and Company, 1926.

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pupils to the endeavor at rather full functioning in disciplinary, social, curricular, vocational, and avocational guidance. Restriction to attendance and disciplinary and social-moral concerns is the more common practice as far as the home room relates to guidance, but there is also some use of the home room in the social organization of the school, a use to which reference will again be made in the next chapter.

Among methods of assigning pupils to home rooms, three may be mentioned. (1) The first is the simple one of distributing and redistributing the pupils of the school to the home rooms at the opening of each year or semester, the only basis of division being that all must be of the same grade, as Grade VII, or Grade VIII B. Ordinarily the pupils in the home-room group have one or more classes with their home-room teacher at the opening and close of each session or day, and also sometimes during a period of long or short duration known as the "home-room period." This redistribution of pupils at the opening of each year or semester has some advantages over other methods in the ease with which it is accomplished, but it harbors an objection in that the home-room teacher hardly becomes well acquainted with one group of children when he is assigned a new group. This tends to defeat the purposes of the home-room plan. (2) Awareness of this objection has prompted many schools to promote the home-room teacher with the home-room group. Because eliminations, transfers to other schools, the vicissitudes of schedule-making, administration of variable curricula, etc. operate despite intent to break down the theoretical continuity of the groups, this plan is much to be preferred to the first one on account of the opportunity it affords of the home-room teacher's capitalizing on his knowledge of the pupil to the pupil's advantage. (3) A third method

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is that described by Heironimus,¹ which "assigns pupils from all grades to each group," allowing the group to "remain constant except for promotions to and from school." Two of the advantages which Heironimus, who used the plan in the Garfield Junior High School of Richmond, Indiana, believes it has over others, are that it "makes for continuity and permanency" and "enables each adviser to get in touch with his pupils more quickly," since only a few new ones are received into each group each year or term. There is also the social advantage of tending to eliminate the class lines that sometimes too readily and too vigorously manifest themselves in secondary schools. There is, on the other hand, the disadvantage, as compared with the first two plans described, of not making it possible for the home-room teacher to give instruction to his home-room group as a class.

The influence of the plan of ability grouping, described in Chapter VIII, on the workings of the home-room plan will depend upon whether the lines of division in the former are respected in making up the latter. The conviction is often expressed — and there is a good deal to be said for it — that where ability grouping is the practice, the plan of home-room grouping should seek to secure a representation of all ability groups in each home-room group. Such a plan would help to offset any disadvantage of the lack of democracy that may tend to creep into schools in which ability grouping is practiced.

The centralization of advisory responsibilities. A crucial question in considering the organization of the junior high school for guidance is whether or not advisory responsibilities should be centralized. There is great diversity of

¹ N. C. Heironimus, "The Teacher-Adviser in the Junior High School," *Educational Administration and Supervision* (February, 1917), Vol. III, pp. 91-94.

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practice in schools, ranging from complete centralization in one person to a spread of these responsibilities to all members of the teaching staff with little or no effort at coördination. In discussing this question there is some advantage in considering it as two subquestions: (1) as to *direction* of these activities and (2) as to doing the actual *advising of individual pupils*. Because the actual advisory work is one part of the guidance program as a whole, the first of these questions may be answered in terms similar to those quoted above from the Pennsylvania Manual for Junior High Schools. This manual recommends that the administrative direction of all guidance activities be by the principal or an associate specifically delegated to administer the guidance program. Without this there would not be that indispensable coördination of all elements in the program. Whoever thus directs the work should have made some special study of the guidance problem.

The answer to the second question must be in large part determined by the possibility or impossibility of having all members of a teaching staff, or of that portion of the teaching staff represented in the home-room staff, competent to advise in all curricular and vocational matters. The belief gains ground that this task is itself so exacting in special knowledge required for efficiency in it as to make it impossible of attainment by *all* members of an instructional staff, each of whom already has the responsibility of rendering efficient service in a teaching specialty, and most of whom have the added responsibility of being home-room teachers. It seems preferable to assign the work of curricular and vocational guidance to a much smaller number of persons who have some special fitness and training for it, these to work under the direction of the principal or the "associate specifically delegated to

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administer the guidance program." These may devote all or only a part of their time to the work. It is believed that they can be more helpful if they also have some teaching responsibilities in the school. The number will depend on the size of the enrollment and the extent of the advisory service. In small schools the staff may be limited to the principal or to one part-time or full-time person other than the principal.

There is also a somewhat similar tendency, but perhaps not so marked, to centralize advisory activities of disciplinary, social, and moral kinds in some person or persons specially assigned to the task. The responsibilities here are to coördinate the work in those activities which the home rooms carry on, and to go beyond this with the special problem cases that arise. For this special advisers of boys and of girls are appointed. In some instances these special advisers have direction also of the extra-curricular program; in others curricular and vocational guidance also quite properly falls to them; in still others they may be responsible for all these types of work.

In certain localities it is the practice to place the work of guidance in junior high schools or in other schools in the system under the general direction of the bureau of research, with those who direct this work in particular schools more or less responsible to the bureau. This practice has much to commend it, especially during the early stages, while techniques of testing and observation, essential to functional guidance, are under development. When treatment of problems of pupil personnel has reached the stage that classroom teaching has attained, it will be time enough for those in charge of guidance in particular schools to be given the same relationship of autonomous association with the bureau of research now enjoyed by those who supervise instruction.

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The classroom teacher and guidance. It might be mistakenly inferred from the foregoing discussion of centralization of advisory responsibilities that the rôle of the classroom teacher in guidance is an unimportant one. It would be unfortunate indeed if, while centralization was being accomplished, the notion should pervade the staffs of our junior high schools that this is true. The relationship of the classroom teacher to guidance would still be a highly significant one, as may be judged from a moment's consideration of his relationships to the means and methods of guidance listed earlier in the chapter. First in order may be mentioned the try-out relationships of the subjects in the program of studies. With these the teacher must be conversant, including the relation of success or failure in the subject for which the teacher is responsible to the likelihood of success in later work in the same or related fields or in many lines of occupational activity. The exploratory objective will need to be discriminatingly recognized in the presentation of all courses of study. Because all teachers will have responsibilities for some phase of the extra-curricular life of the school, they will need to be conversant with relationships here somewhat similar to those pointed out for the subjects of study. The fact that most classroom teachers also serve as home-room teachers has already been noted; the vital relationship to the guidance program here is apparent. Beyond all this is the knowledge of the pupil obtained through classroom and other contacts with him over long periods. These contacts afford a basis for judgment of his personal make-up that is one of the most informative we can obtain from any source. These relationships, in a properly coördinated system of guidance, make the classroom teacher an indispensable factor in our program of curricular, vocational, disciplinary, social, and moral guidance.

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QUESTIONS AND PROBLEMS

1. Relate the situation disclosed by the scores on the behavior-rating scale to adolescence as discussed in Chapter III.
2. Check the guidance activities in the Washington Junior High School in Rochester, New York, and in the Latimer Junior High School in Pittsburgh against a rather complete list of such activities.
3. What objections are to be raised to talks on occupations before junior-high-school pupils by those at work in these occupations? How may these objections be in part forestalled?
4. Discuss the possible uses of intelligence-test scores or intelligence quotients in guidance.
5. With respect to what qualifications should the home-room teacher differ from the classroom teacher?
6. Suggest in some detail the organization of guidance (1) in a junior high school of 200 pupils and (2) in a junior high school of 1500 pupils.
7. Suggest investigations the findings of which are fundamental to the adequate functioning of guidance.

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XII

THE SOCIAL ORGANIZATION

THE PLACE OF ALLIED ACTIVITIES IN THE JUNIOR HIGH SCHOOL

The allied activities at home in the junior high school. It is significant for the extent of recognition of allied, or extra-curricular, activities in the junior high school that the development of both has been to a large extent contemporaneous. Over a long period these activities were suppressed in our secondary schools, on the assumption that they interfere with the legitimate work of the school, which was accepted as limited to efficiency in the school studies. They were, however, too spontaneously engaged in to be suppressed, and continued to manifest themselves, but in untoward forms. The working policy then shifted to one of toleration and control. The activities were laid hold of in order to prevent their doing harm. More recently, and almost contemporaneously with the rise of the junior high school, has come an appreciation of their educational promise and a policy of utilizing them for constructive ends. It was only natural, therefore, that these allied activities should be experiencing a more rapid development in junior high schools than elsewhere in the system, especially because these schools are less trammelled by tradition, and because the child, as indicated in Chapter III in the discussion of development during adolescence, is in this period experiencing an accelerated development of his social impulses.

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The values claimed for allied activities. The present writer has elsewhere shown that a great variety of claims are made for allied activities on the secondary-school level.¹ These claims, although stressing certain purposes more than others, were found to spread over the entire gamut of aims and functions of secondary education. The aim under which the largest single number of claims fall is the civic-social-moral, but values along the lines of the recreational (or avocational), health, and vocational aims are also often posited.

The writers who made these claims for the allied activities also frequently mentioned values related to the functions of secondary education as these were presented near the close of Chapter III.² But these are so nearly akin to the functions of the junior high school as accepted in this book that it will suffice for purposes here to indicate the potential relationship of allied activities to the peculiar functions. The high degree of significance attainable is suggested by the column of Feature 9 in Fig. 18. The requirements of natural sequence of thought call for an order of reference to the functions here differing from that in the figure. The appropriateness of social activities for the recognition of adolescent impulses and interests has already been mentioned. Effectively administered they should enrich the socializing opportunities of the school and encourage a self-direction of pupils that will constitute progress in the disciplinary situation. The possible value in guidance as seen by Kitson was pointed out in the foregoing chapter: the variety of activities will permit the pupil to explore for his special propensities.

¹ Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, pp. 9-12. These materials are to be found also in Leonard V. Koos's "American Secondary School" (Ginn and Company, 1927), pp. 585-588.

² See page 120.

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Finding these propensities leads to recognizing individual differences. We may anticipate that participation will often turn out to be in the nature of a beginning of vocational preparation. The presence of the social motive, for example, as in membership in an orchestra, will frequently bring a more intense application, resulting in a higher quality of performance, and this in effect is economy of time. The enhanced interest in school life brought by these activities should encourage many, otherwise disposed to leave, to make a longer stay in school.

The acceptability of the claims made. It is one thing to make these claims and a quite different one to be assured that they are achieved or achievable. As has often taken place with the subjects of study, a body of untenable assumptions may readily envelop some special line of allied activities or all of them. The present writer has admitted during a consideration of the problem of evaluating these activities the paucity of effort at appraising them and the practically total absence of scientifically derived evidence in their support.¹ Counts has, without denying the values of the activities, quite discerningly attacked certain of the assumptions at work in ascribing values to them, has indicated the dearth of objective evidence in support of the "extra-curriculum," and has proposed certain procedures by which appraisal may be accomplished with a view to placing the activities on a functioning basis. He suggests two "lines of inquiry."²

[The first of these] relates to the after-school careers of pupils. Investigations of this type have not been numerous because they are difficult to prosecute and because they require much time and patience. Until we think more completely in

¹ Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, chap. xx.

² George S. Counts, "Procedures in Evaluating Extra-Curriculum Activities," *School Review* (June, 1926), Vol. XXXIV, pp. 419-421.

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terms of the influence of the school on behavior outside the school, the measurement movement will fall far short of its possibilities. . . .

The second line of inquiry which should be fostered is the case study. Through care and thought, the ordinary methods of observation may be improved and, within limits, may produce results of considerable scientific validity. This method should prove of special value in discovering the possibilities of the extra-curriculum activities in the field of mental hygiene. . . . The rôle which the extra-curriculum may be expected to play in adjusting the individual to the social world about him is probably as important as is any of the claims which are ordinarily advanced. The study of the problem and of many related problems can be pursued by the means of the careful study of individual cases by trained persons.

Other procedures were proposed by the present writer in his consideration of the problem of evaluation already referred to.

While they are being thus carefully appraised by objective methods, the activities concerned will continue to be carried on in the schools. It should be urged, however, that in the meantime the selection of the activities and the procedures to be followed in administering them be according to the best empirical criteria at hand. In partial justification of this as a temporary policy, it may be said that it is in no wise different from and no whit more reprehensible than the practice followed by the army of teachers and other educators who have for generations been making claims concerning the values of particular subjects and of particular methods of teaching. Only recently have a small proportion of the teachers in part renounced subservience to the older practice. Moreover, in some respects these activities have an advantage over the usual curriculum content in that they are partially self-evaluative. Two relationships come to mind in support of

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this assertion. These are (1) the spontaneous interests in which the activities take rise and (2) the faithful reproduction contained in them of life outside the school. Even if one does not accept the philosophy of curriculum-making which in its extreme form would require that *all* content should arise out of the spontaneous interests of the pupils, one must admit that it is one vital and important criterion of what should find place in the schools. Most allied activities qualify on this criterion. Again, although not always completely representative of extra-school life, there is enough of identity to afford much more of justification for maintaining the activities than can be mustered for a good deal of what is contained in many school subjects.

THE NATURE AND EXTENT OF THE ACTIVITIES

The different kinds of allied activities found in junior high schools. The main lines along which allied activities in junior high schools distribute themselves may be seen in materials on the subject reported by Terry¹ (see Fig. 25). In the study were represented 1124 activities going forward in eighty-two junior high schools. Almost nine tenths — 88.2 per cent, to be exact — were in the five groups he designated as physical education, music, English, all-school, and science. The remainder were distributed to art, French, commercial, Spanish, Latin, social, domestic science, mathematics, history, and mechanical arts. Under physical education were included the athletic interests, such as teams of various kinds and athletic associations; under music fell all the wide variety of musical organizations; under English were placed the school

¹ Paul W. Terry, "General Survey of Practices [in] Junior High Schools," Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, chap. iii.

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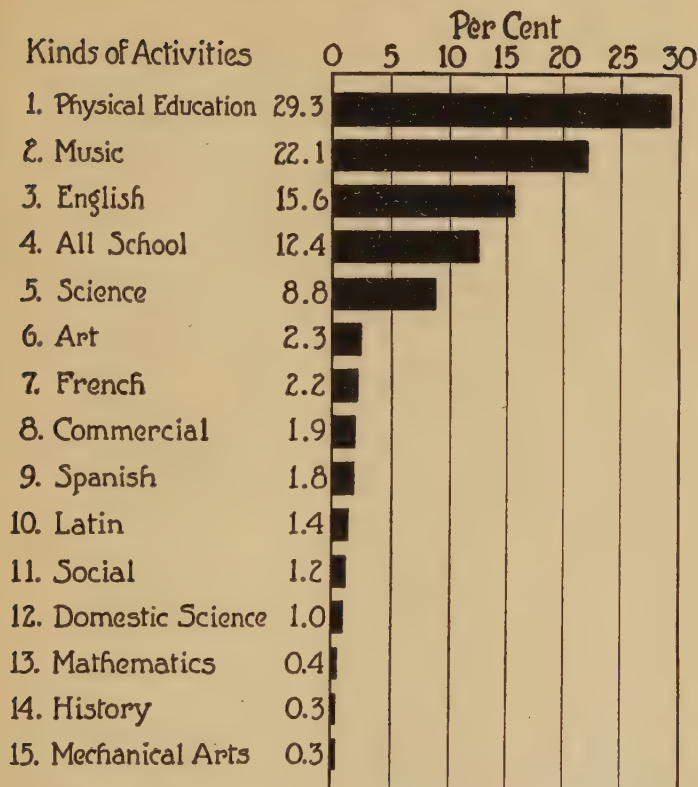


FIG. 25. Percentage distribution of different kinds of allied activities in junior high schools. (After Terry)

paper, dramatics, debating, and similar interests; under science were included "science" clubs reported by this name, as well as camera clubs, botany clubs, etc. Among "all-school" activities were class organizations, student associations, honor societies, and boys' and girls' clubs.

The specific interests represented in allied activities. The social organizations to be found in junior high schools tend

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to include a variety as wide as are the interests of pupils and teachers. Something of the range is shown in the following partial list of ninety-seven clubs and activities reported to have been formed in the junior high schools of Rochester, New York.¹ The list could easily be extended by additions from other cities and schools.

Aëroplane	Hiking (girls)	Pottery
Art Needle	How it is Made	Poultry
Astronomy	Illustrators	Public Speaking
Athletic Club (boys)	Indoor Games	Radio
Athletic Club (girls)	Ingenuity	Rag Rug
Band	Kipling	Reporters
Basketry	Kite	Santa Claus
Bird	Knitting	Senior Corps (boys)
Book	Know Your City	Senior Corps (girls)
Book Lovers	Know Your Industries	Science
Boy Scouts	Landscape Gardening	Scoutcraft
Camera	Laundry	Scrap Book
Camp Cookery	Lend a Hand	Screen
Camp Craft Club	(Christmas Club)	Short Story
Camp Fire Girls	Life	Shorthand
Capital Club	Linoleum Engraving	Sketching
Cartooning	Local History	Social (boys)
Chemistry	Metal	Spanish
Crafts	Military	Story Telling
Crocheting	Millinery	Study Club
Dancing (girls)	Mythology	Success Club
Debating	Musical Appreciation	Swimming
Dickens	Needle Craft	Tatting
Dramatics	New Invention	Tennis
Drawing and Illustration	Newspaper	Travel
Electrical	Operetta	Up-to-Date
Embroidery	Orchestra	Violin (advanced)
First Aid	Paper Weaving	Violin (beginners)
Folk Song and Dance	Pencil Drawing	Watch Your Speech
French	Pen Lettering	Wild Animal
Gift	Penmanship	Wild Flower
Glee	Piano	Willing Workers
Handicraft	Proficiency	

¹ The Junior High Schools of Rochester, New York, 1923, p. 55.

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Variation in extent in different schools. The average number of activities in the eighty-two junior high schools represented in the data reported by Terry was not quite fourteen. This does not, of course, mean that schools have anything like equal numbers of these activities in operation. In general the number increases with the size of enrollment and of teaching staff, but there are exceptions to this, as is suggested by Table XXXV, which reports the kinds and numbers of activities maintained in three schools of approximately equal enrollments. School A, a three-year unit with seven hundred pupils, had but 6 organizations; School B, of three grades with the same enrollment, had 18, or three times as many as School A; School C, of two grades with an approximately equal enrollment, had 34, or almost twice as many such organizations as School B, and almost six times as many as School A.

PRINCIPLES AND PRACTICES IN ADMINISTERING THE ACTIVITIES

Hindrances to achieving the values ascribed. One who discusses with teachers and principals the problems of administering the allied activities, or reads what has been written concerning them, frequently encounters references to obstacles to putting them on a constructive educational basis. It is said that some pupils participate too much and others participate little or not at all. Certain unfortunate conditions arise, such as cliquishness or snobbery. Sometimes they are conducted on too costly a basis to be democratic, and sometimes resources are not at hand for necessary equipment and supplies to make them effective. At times there is interference from the outside, or there is the difficulty of conflicting schedules. Teachers may

TABLE XXXV. EXTENT OF THE ACTIVITIES PROGRAM IN THREE JUNIOR HIGH SCHOOLS
OF APPROXIMATELY THE SAME SIZE¹

SCHOOL	KINDS OF ACTIVITIES				TOTAL NUM- BER
	All-School	Musical	English	Athletic	Departmental
A (700 pupils in Grades 7, 8, 9)	Class organizations	Orchestra Glee Club	School paper	Track	Civics Club
B (700 pupils in Grades 7, 8, 9)	Student Association Boys' Club Girls' Club	Orchestra Glee Club Operetta Concert Chorus	School paper Annual Dramatic Club	Track Athletic Association Basket ball Baseball Football Hiking Club	Camera Club
C (750 pupils in Grades 7, 8)		Violin Club	School paper <i>Clubs</i> Dramatic Debating Story Hour Book Lovers Elocution Current Events Scrap Book	Track Athletic Association Basket ball Baseball Girl Scouts Boy Scouts Keeping Fit Club	<i>Clubs</i> Civics Better Citizens Historical Places Travel Stamp Camera Museum Wireless Latin Brush and Pencil Crochet Embroidery Knitting Goodies Sunshine Social Hour Toy Makers

¹ Paul W. Terry, "General Survey of Practices [in] Junior High Schools," Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, chap. iii, p. 32, Table III.

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be unwilling to assume supervisory responsibilities or, if willing, may be unsuited to the work or tend to over-direct or underdirect it. Other obstacles may easily be added to the list. Although not all will be met in a single school situation, they are sufficiently recurrent to give cause for real concern.

The principles of administration of allied activities. It should be possible to formulate and put in practice a policy toward allied activities that would do much to remove these obstacles and that at the same time would accomplish what is even more important, help in positive ways to make the program of activities distinctly educative. A set of principles proposed by a committee working under the direction of Briggs, in a class dealing with the problems of the organization and administration of the junior high school, is well worth quoting in this connection.¹ For the sake of brevity the explanatory portions of the committee's report are omitted. The principles are thirteen in number :

1. Whenever possible a definite time allotment in the regular program should be provided.

2. Each organization should be sponsored by a member or committee of the faculty, who shall be appointed by the principal.

3. All meetings of organizations should be attended by one or more sponsors.

4. Pupils desiring to form an organization should secure the approval of the principal.

5. The school policy should guarantee absolute democracy as to the admission and requirements of all organizations.

6. Membership should be determined by the work and purpose of the organization in accordance with the rules drafted by the members and approved by the principal.

¹ Thomas H. Briggs, "Extra-Curricular Activities in Junior High Schools," *Educational Administration and Supervision* (January, 1922), Vol. VIII, pp. 1-9.

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7. Pupils severing their connection with the school should cease to be members of the organizations.

8. All meetings should be held in the school building unless permission is given by the principal to meet elsewhere.

9. Rules governing eligibility for office-holding in organizations should be in accord with the school policy.

10. The school should limit the number of organizations to which a pupil may belong, keeping in mind the proper balance between the curricular and extra-curricular activities.

11. All money handled by organizations should be properly checked up, either by sponsors making reports to the principal or by a centralized auditing and accounting committee.

12. The school should provide for a student government organization to which should be delegated as much responsibility . . . as it is capable of carrying for the welfare of the community.

13. The school should provide class organizations, honor organizations, and systems of awarding honors; all other organizations should be the outgrowth of the pupils' initiative.

In an analysis of a large body of literature dealing with allied activities in secondary schools the present writer arrived at a somewhat longer list of recommendations for practice which may properly be regarded as principles.¹ The two lists have many principles in common. Among the most significant of the additional principles are two dealing with the nature of supervision or sponsorship. One of these urges guidance and coöperative leadership rather than the complete direction that the classroom teacher, because of teaching traditions, is likely to give unless admonished against it. Too much direction will operate to smother pupil leadership. The other calls for some special knowledge on the part of the sponsor of the line of activity sponsored.

¹ Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, pp. 15-18.

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The time for meetings of the activities. The time of meeting of the activities is a more important matter than may at first appear. Terry found what he classified as three different types of practice in this regard.¹ Almost a third of the schools, for the most part among those with the larger enrollments, arranged for meetings of practically all organizations "during the regular school day." Another type included "that group of schools in which practically all meetings of pupil organizations must be held after the last class has adjourned." He reports more than half the schools following this older practice. The third type includes those schools in which the all-school kind of organization — for example, athletic association and class organizations — and the activities most nearly curricularized, such as musical organizations and dramatics, meet during the school day, and the remaining activities are carried on after school.

An instance of the first type is that in the Okmulgee, Oklahoma, schools, in which the activities period was scheduled from 12:40 to 1:10 P.M. during all school days from Tuesday through Friday, the same period on Monday being used for assembly.² An instance of the second is in the junior high schools of New York City, where they are specifically referred to as "after-school activities."³

Because the first type represents a divergence from older practices, its advantages have often been pointed out. Among the more significant of these are the better attitudes of pupils, teachers, and community. All come to look

¹ Paul W. Terry, "General Survey of Practices [in] Junior High Schools," Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, chap. iii, pp. 33-34.

² Herbert B. Bruner, *The Junior High School at Work*, Teachers College Contributions to Education No. 177. See typical program cards on pages 57-58.

³ Report of the Committee to make a Survey of the Junior High Schools of the City of New York, 1923, chap. xii.

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upon these activities more as legitimate school concerns than as something extraneous to the school situation. This attitude assists in placing them on the constructive basis to be desired. An advantage mentioned by Terry is that it will help to break down the differences between curricular and extra-curricular activities and "gives some ground for the prediction that the distinction may ultimately disappear entirely."¹

Basis of selecting sponsors. The same investigator reports the results of a study of the basis of assignment of teachers to sponsorships of more than a thousand organizations in a larger number of junior high schools: ²

The fact which stands out most strikingly is that advisers are selected almost altogether on the basis of their field of teaching activity. Of the physical education activities 70 per cent are advised by teachers of physical education. A few scattering activities of this kind were supervised by teachers of Spanish and history, by principals, by non-school authorities, and by pupils. . . . Much smaller percentages of exceptions occur in the case of musical activities than in the former case. The situation is similar for all kinds of activities, except the all-school and the social. . . . Principals appear to be most interested in direct contact with the popular athletic and the influential all-school organizations. The small number of pupils who were reported as advisers of all-school and athletic activities were probably presidents of student organizations and captains of teams. Many explanations and interpretations might be made of these facts. Only one outstanding feature, however, will be emphasized — the fact that all of the junior-high-school fields of instruction offer interests about which alert teachers can organize pupil activities. Teacher-training institutions and the officers who select teachers for junior high

¹ Paul W. Terry, "General Survey of Practices [in] Junior High Schools," Twenty-fifth Yearbook of the National Society for the Study of Education, Part II, chap. iii, p. 34.

² *Ibid.* pp. 36-38.

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schools should exercise their respective functions in such a way as to enable the schools to be manned by teachers who are able to develop the extra-curricular side of their subject-matter interests. The value of careful attention to this side of the teacher's work is especially imperative in case of the physical education, music, English, and science teachers who, together, supervise more than a majority of all pupil organizations.

PUPIL PARTICIPATION IN SCHOOL CONTROL

The purposes and means of pupil participation in school control. Much is being made in junior high schools of pupil participation in school control. It is significant to note that the emphasis is on "participation" and "coöperation" rather than on "self-government," as was the case when the movement first got under way when launched in high schools and elementary schools. It is now the almost general opinion that a better policy is frankly to admit that immature pupils are not ready for complete assumption of self-direction.

The purposes, or "objectives," found by Rugg to be proposed, in literature bearing on the subject, for pupil participation,¹ were, in the order of frequency of mention, (1) to train for worthy citizenship through the development of coöperation, self-control, etc.; (2) to establish better understanding, better spirit, and coöperation between pupils and faculty; (3) to develop interest in school work, school spirit, and school pride; (4) to develop intelligent leadership; (5) to provide for pupil expression. The first of these was mentioned more often than all the remaining purposes combined. Since the "worthy citizenship" desired with us is that appropriate in a democ-

¹ Earle Rugg, "Student Participation in School Government," Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, chap. xi, pp. 127-140, Table I and Fig. 1.

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racy, it is well to bear in mind that this implies, among other things, coöperative control in matters of government, group coöperation with efforts toward social progress, and community of recreational concerns.

In the school the avenues of participation in control are the class organizations, usually represented in the home-room groups; some body representative of these class organizations and other interests; and the allied activities with which we have been primarily concerned in the foregoing sections of this chapter. Since they are to be given no further special treatment hereafter, it may be said that, because pupil initiative is more nearly typical of the allied activities than of others, it is appropriate that the plan of pupil participation in control be applied here first and advanced to other concerns as pupils gain confidence and show strength for carrying responsibility.

The home room in pupil participation in school control. The home-room group was briefly considered in the foregoing chapter in the treatment of the organization of guidance. Although it is sometimes used for broader purposes, its chief service was there reported to be in matters of attendance and discipline, with some tendency to extend the latter to social-moral advice and guidance. It is just because of its concern with disciplinary-social-moral affairs that the home-room group is useful in applying the principle of pupil participation in control. It is regarded as the primary unit in pupil participation, a unit of the social whole. Where the home room is used in this way, the school as a whole, or what may be referred to as the school community, may be regarded as a federation of home-room groups.

The functions of the home room relating to pupil participation, as reported by Terry, are "receiving notices from, and electing representatives to, the central govern-

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ing organizations, serving as a center for discussion of school activities and problems of pupils, and facilitating the conduct of other school enterprises.”¹ The Pennsylvania Manual for Junior High Schools,² in dealing with the home room, outlines four types of activity for it: (1) home-room teachers’ guidance, (2) pupil coöperative government, (3) class meetings, and (4) preparation of assembly programs. The last three relate to the allied activities, the concern of this chapter as a whole, and the second and third as treated have to do with the special problem in this section, pupil participation. For this reason the two statements are quoted almost in full:

Pupil coöperative government. Pupil participation in school administration should have its origin in the home room. Pupil officers should be elected to serve the home-room class. The creation of an office should succeed the definite demonstration of the need for the office, for example, when a class president is needed to preside at class meetings, to represent the class in a School Community Council, or to serve as the classroom teacher’s proxy in her absence; when a vice-president is needed to serve as an alternate for the president or to act as a business manager for the class; when a secretary is needed to record and report the minutes of class meetings or to act as publicity agent in the home room for general school activities; when a treasurer is needed to care for class funds or to become class banker in a school-savings project; . . . when an usher is needed to escort visitors from room to room or to extend the courtesies of the home room to other classes; whenever any specific duty can clearly be delegated to pupil participation no hesitation should be felt in creating a pupil office to fulfill the duty, or to delegate the duty to an office previously created. No office should exist for itself alone but only for the actual service the pupil holder of the office can render. . . .

¹ Paul W. Terry, “General Survey of Practices [in] Junior High Schools,” Twenty-fifth Yearbook of the National Society for the Study of Education (1926), Part II, p. 35.

² Pp. 85-86.

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Class meetings. It should always be remembered that the home-room class is an organized unit mobilized for actual participation in the school life. The home-room period should, therefore, be used in part for class meetings in which class business is transacted in accordance with parliamentary practice, in which coöperation with school community projects is secured, in which announcements to the home-room class are made, and in which class programs are given under the initiative and direction of class officers or pupil committees.

The central organization. The bodies representative of the home rooms and other features of the central organization in schools where pupil participation in school control is encouraged are variously constituted. Often there is a school council made up of representatives from the home rooms, who may be either the presidents of the home rooms or one or more delegates from each home room specially elected for this purpose. The plan in the Ben Blewett Junior High School, St. Louis, as described by Lyman, provided for both a congress and a cabinet: ¹

A school constitution prescribes the higher order of government, each room electing two congressmen, a boy and a girl, to the student congress, there being one congress for each grade under the supervision of the faculty grade administrator. Congresses meet at the call of the administrator and consider matters pertaining to student government, student interests, or other needs of the school. The congressmen report to their advisory groups such actions as may be taken.

The School Cabinet is a smaller body made up of the principal, assistant principal, the three grade administrators, one teacher from each grade chosen by the principal, one boy and one girl elected by each grade congress, and student delegates

¹ R. L. Lyman, "The Ben Blewett Junior High School of St. Louis," *School Review* (January and February, 1920), Vol. XXVIII, pp. 26-40 (especially pages 31-32) and 97-111. This article was reprinted in R. L. Lyman and Philip W. L. Cox's "Junior High School Practices" (Laidlaw Brothers, 1925), pp. 69-92.

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from the school paper, *Junior Life*, from the corridor officers, from the Blewett "B" Council [an honor group], and from certain athletic, civic, and music clubs.

The need for a central representative body in any plan of pupil participation is so obvious that there is little or no necessity, for the brief treatment here attempted, of setting down its functions at length.

QUESTIONS AND PROBLEMS

1. What bearing may a vigorous development of allied activities have on tendencies to participate in unwholesome recreations outside of school?

2. Describe the allied activities and their organization and control in some junior high school of your acquaintance. Discuss their adequacy or inadequacy.

3. What can be said for and against making a time allowance for these activities within the daily or weekly schedule rather than after school?

4. Consider the advisability of having pupils select their own sponsors.

5. Justify or criticize the refusal of a junior-high-school teacher to assume responsibilities in connection with allied activities on the ground that the contract entered into specified no such responsibility.

6. Discuss the merits of each of the "principles of administration" formulated by the committee in Professor Briggs's class.

7. What are the duties of the different home-room officers?

8. How may pupil participation in school government be introduced?

9. Make a plan of pupil participation in control for some junior high school.

10. Prepare a constitution for pupil participation in control in a junior high school.

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XIII

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THE RELATION OF THE TEACHER TO JUNIOR-HIGH-SCHOOL REORGANIZATION

The teacher and the other features of reorganization. The staff has not been left for consideration near the end of the list of features because it is regarded as of little importance. On the contrary, this has been done to make the dependence of other features on the staff as apparent as possible. In spite of all the importance that may be ascribed to other features of the junior high school, the supreme place of properly qualified teachers and principals in effecting thoroughgoing reorganization cannot be gainsaid. It is not too much to say that if a staff meeting all desirable requirements could be secured, most of the remaining features would soon follow.

This dependence may be more readily appreciated if the properly qualified teacher is briefly described in terms of his relations to the features of the new institution. The features with which the teachers may be expected to have most intimate relationship are the program of studies (which includes ability grouping and departmentalization), methods, the advisory system, and the social organization. Since it is the teacher who presents the materials of the program, he should have sufficient ability in the fields he is teaching to assemble and organize them. This is the more imperative with a dearth in many fields of textbooks suitable for junior-high-school courses. The knowledge

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necessary is often not of the sort that is being presented to those preparing for teaching positions. Such a teacher must know the values of subjects of study other than his own as well as be conversant with the opportunities of correlating his work with that presented by others. He must be equipped to teach by the newer types of method, invoking the use of directed study, project, socialization, and individualization. In discussing the advisory system a good deal was made of the teacher's rôle in guidance, both as a home-room teacher and as a teacher of subjects to be used in trying out the pupils' capacities and interests, — a rôle for which few teachers are at present prepared. The teacher has been seen to be an important factor in the development and direction of the allied activities. He should be socially and professionally so constituted as to appreciate them as an agency of education rather than to look upon them as an annoyance to be tolerated or as an intrusion upon the purely academic interests. Adequately to administer all the features named he should also measure up on what Gosling refers to as the "moral requirements" of the junior-high-school teacher, namely, understanding of and sympathy with adolescent boys and girls, a clean, generous, and inspiring personality, qualities of real leadership, a broad, sound vision, and a keen sense of obligations.¹

The teacher and the achievement of the peculiar functions. The importance of the rôle of the teacher in achieving the special purposes of the junior high school may readily be appreciated from the standpoint of his relation to the efficiency of other features, as this has just been reviewed. To the teacher must be assigned the responsibility of ap-

¹ Thomas W. Gosling, "The Selection and the Training of Teachers for Junior High Schools," Eighteenth Yearbook of the National Society for the Study of Education (1919), Part I, Section II, chap. i, p. 173.

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plying these features in such a way as to facilitate achievement of these purposes. The importance of the direct relationship between staff and purpose is suggested under Feature 10 in Fig. 18 (see page 131).

The junior-high-school teacher is here considered first and more extendedly as to training, and subsequently as to sex and remuneration.

THE TRAINING OF THE JUNIOR-HIGH-SCHOOL TEACHER

The present status. The situation as to extent and place of training of teachers in junior high schools may be illustrated by referring to data reported by Stayer,¹ who made an investigation in a number of respects of the teaching staffs in ninety-nine junior high schools representing thirty-six states. The percentages with certain amounts and kinds of training as found in his study are shown in Table XXXVI, which reports these proportions as found in two-year and three-year schools, and in all schools represented. In making interpretations from the data reported it should be borne in mind that the percentages are not always mutually exclusive. This caution applies especially to college and university graduates, who may also be normal-school graduates, and to those reported as having done some graduate study, who are, for the most part, also included among the college graduates.

Probably most interest attaches to the proportion of junior-high-school teachers who are graduates of colleges and universities, here found to be 39 per cent for all schools represented, and 29 per cent and 42 per cent, respectively, for the schools composed of seventh and eighth grades only and the schools including seventh, eighth, and ninth

¹ Samuel B. Stayer, "The Status of Teachers in Junior High Schools," *School Review* (May, 1921), Vol. XXIX, pp. 379-387.

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grades. This difference led Stayer to conclude that "the three-grade junior high school, as would be expected, draws a larger proportion of college men and women."

It would, however, be improper to infer that this larger percentage of college graduates is evenly distributed to all three grades in the three-year units. For some schools and systems this would be an incorrect conclusion. There are schools in which, out of respect to state and college-entrance standards, most if not all of those who are college

TABLE XXXVI. PERCENTAGE DISTRIBUTION OF JUNIOR-HIGH-SCHOOL TEACHERS ON THE BASIS OF THE EXTENT OF TRAINING ¹

TYPE OF SCHOOL	HIGH SCHOOL OR LESS	NORMAL SCHOOL		COLLEGE OR UNIVERSITY		GRADUATE STUDY ²
		Graduate	Non-graduate	Graduate	Non-graduate	
Two-year . .	12	46	4	29	12	22
Three-year . .	8	39	6	42	18	28
All	9	41	6	39	17	26

graduates are assigned to teach only in the ninth grade, the nongraduates being, as formerly, assigned exclusively or almost exclusively to the seventh and eighth grades. The judgment is ventured in passing that this is little short of a reprehensible practice because it *tends to perpetuate the very want of articulation between eighth and ninth grades which has been so much deplored and which it is the aim of the junior high school as a transitional unit to obliterate.*

Trends as to extent of training. Such data as Stayer's can only describe the situation with respect to extent of training of teachers in a large number of schools and at only a single stage in the development of the junior high school. They disclose neither (1) the wide variation from system

¹ Samuel B. Stayer, "The Status of Teachers in Junior High Schools," *School Review* (May, 1921), Vol. XXIX, p. 384, Table II.

² Largely summer courses and extension study.

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to system nor (2) the endeavor to modify the situation through the new appointments made from year to year. When measured on the assumption that a longer period of training is desirable for junior-high-school teachers, many systems and schools can be found in which the status of preparation of the staff is much higher. For example, from Berkeley, California, comes the report that, in 1922, of the whole number of teachers, 70 had regular secondary-school certificates (which in that state call for the equivalent of five years of college work), 31 had special secondary-school certificates, 2 had junior-high-school certificates (which require the equivalent of two years of college work), and only 3 had elementary certificates.¹ Illustrative of systems raising the level of training of junior-high-school teachers by selection of those with more training in making new appointments is that in Cleveland, Ohio. A tabulation of recent appointees to elementary-school, junior-high-school, and senior-high-school positions with respect to degrees held resulted in the percentages shown in Fig. 26.² Although almost all recent appointees to elementary-school service were without degrees, less than a third of the appointees to junior-high-school service were without degrees. Almost two thirds had the bachelor's degree and no inconsiderable proportion — 5.1 per cent — had the master's degree. The proportion with bachelor's as the highest degree was almost identical with that for senior high schools. The differences in favor of the senior-high-school group are a somewhat smaller percentage without degrees and a somewhat larger percentage with the master's degree. Most of the appointees without degrees in both junior and senior high schools were in fields other

¹ James T. Preston and Others, *Junior High Schools of Berkeley, California, United States Bureau of Education Bulletin No. 4*, 1923.

² George F. Zook and Others, *Survey of Higher Education in Cleveland*, pp. 290-292. The Cleveland Foundation Committee, 1925.

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than the academic subjects — for example, in commercial branches, physical education, and the industrial and vocational arts. A cross section of all junior-high-school teachers in the Cleveland system would, of course, show a larger percentage without degrees, the explanation for this being that when a large system like that represented effects junior-high-school reorganization rapidly over the entire city,

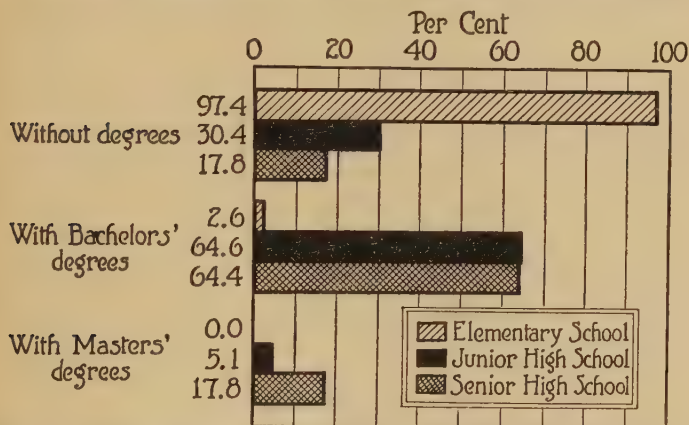


FIG. 26. Percentages of recent appointees to teaching positions in Cleveland, Ohio, without degrees, with bachelors' degrees, and with masters' degrees

teachers in service in the seventh and eighth grades at the time, whether or not they have degrees, must be given positions and will ordinarily be assigned to junior-high-school service.

The preference for teachers with degrees is not universal if we may judge from responses to a question put by Foster to superintendents of schools concerning the sources from which junior-high-school teachers are recruited.¹

¹ Herbert H. Foster, "Student Teaching and the Training of the Junior-High-School Teacher," *Educational Administration and Supervision* (September, 1922), Vol. VIII, pp. 349-351.

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... in 45 per cent of the cases the junior-high-school teachers are drawn from the ranks of experienced elementary-school teachers, in 40 per cent from recent graduates of colleges and universities, and in 15 per cent from recent graduates of normal schools. However, most of the 45 per cent first mentioned require that the teachers shall have supplemented their teaching experience with enough study to give them the vantage of at least 3 and preferably 4 years of study of college rank, with special reference to the junior-high-school field.

The same writer concludes, however, from a consideration of related data that this dominant preference would be quite different if the candidates with degrees had had training for junior-high-school work.

But this does not mean that this distribution represents the demand. It is rather the index of the supply of those who, in the absence of adequate training, can be most advantageously and expeditiously adapted to the new task. The general attitude seems to be that the immediate transfer from grades to junior high school is but an emergency expedient. . . . Would there be a demand for adequately trained junior-high-school teachers if such were available? . . . The degree to which experience figures may be inferred from the fact that two superintendents out of every three do not consider extended experience as a prerequisite for junior-high-school teaching, and that not one demands more than four years of experience. . . . There is thus a demand for the adequately trained novice, and nearly half the superintendents say they would be willing to accept them directly from college *if* they were adequately trained. . . .

The facilities for junior-high-school teacher-training. If this view is accepted, the question turns on whether adequate training opportunities are at hand or will soon be made available to those who seek teaching positions in the junior high schools. Certain data reported by Gaumnitz for three types of higher institutions afford some basis for

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answer to this question.¹ He examined the catalogues of 1921-1922 or 1922-1923 of a large number of institutions to ascertain whether or not they were "active" in this regard, with results as shown in Table XXXVII. "Professional colleges" as defined for this study included institutions which have "either a distinct college of education or a well-defined department of education." "Academic colleges" included "private and denominational

TABLE XXXVII. NUMBER OF CATALOGUES EXAMINED AND NUMBER AND PERCENTAGE OF EACH TYPE AND OF ALL INSTITUTIONS FOUND TO BE ACTIVE IN JUNIOR-HIGH-SCHOOL TEACHER-PREPARATION ²

TYPE OF INSTITUTION	NUMBER OF CATALOGUES EXAMINED	TÓTAL NUMBER ACTIVE	PER CENT ACTIVE
Professional colleges	97	65	67
Academic colleges	145	6	4
Normal schools	187	89	48
<i>Total</i>	429	160	37

colleges which offer certain courses designed to train teachers but which have no distinct department of education." The third group was made up of normal schools and teachers' colleges, which are, with only occasional exceptions, public institutions maintained for the express purpose of training teachers. The designation of institutions as "active" was generous indeed, since any one or more of a number of provisions qualified a school to be placed in the group so classified. These provisions were general

¹ Walter H. Gaumnitz, "Provisions made by Colleges and Normal Schools to give a Special Type of Training to Teachers of Junior High Schools," *Educational Administration and Supervision* (November, 1925), Vol. XI, pp. 557-571.

² Ibid. p. 559, Table I.

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courses dealing with the junior high school, "special junior-high-school subject-matter courses," junior-high-school practice schools, curricula for junior-high-school teaching with major and minor electives (presumably as teaching subjects), and fully outlined two-year, three-year, and four-year curricula. Almost two thirds of these curricula are but two years in length, almost another third are three years in length, and but six of a total of seventy are four years in length, that is, of the length required for a degree.

Only slightly more than a third of all these institutions could be classified as active even with the generous definition used. The professional colleges are farthest along in this development, with two thirds in the active column. The normal schools and teachers' colleges come next, with almost half doing something of the sort listed. The proportion of academic colleges making such provisions is negligible. It may be concluded that something is being done, but that few are in a position to give adequate preparation for the work.

One may conjecture as to which of the three groups is likely soon to achieve the adequate training program. (1) Professional colleges are sympathetic with the movement, but are more disposed to emphasize the training of administrators and other leaders in the field than the training of junior-high-school teachers. They also stress the training of secondary-school teachers, but the tradition is for these trainees to look forward to work in senior and four-year high schools rather than in junior high schools. The tradition manifests some tendency to break down. (2) The normal schools and teachers' colleges are ambitious to assume the responsibility, and this is one point in their favor. Another is that they have in the past given training for teaching in two of the three grades that make up

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the three-year junior-high-school period. They are handicapped by the fact that they are not often strong four-year institutions. Some are making rapid strides in this direction, but this does not constitute an argument for all to take on the training of junior-high-school teachers. There is some handicap also in the fact that they are somewhat bound by elementary-school traditions, which may in some instances prevent the full appreciation on the part of their students of the junior-high-school idea. (3) The academic colleges will be the last to be influenced by the new movement in regard to what they do in the training of teachers. Most of them will lack practice-teaching facilities in junior high schools, and the tradition of preparation for the four-year high school will abide with them over a longer period than for other institutions. But the junior-high-school movement will eventually bring all three groups to recognize it in their training programs, so that school authorities may in time be able to secure teachers with four years of training which has been planned for junior-high-school-teaching needs. These authorities will then be freed from the necessity of resorting to the expedient of taking people untrained for the task, whether with two, three, four, or five years of training beyond the high school, and endeavoring to adapt them in service to junior-high-school teaching.

What should constitute the training of junior-high-school teachers? Nothing short of a discriminating activity analysis can give us the basis for mapping out the curriculum appropriate to be pursued by the junior-high-school teacher in training. While we await this, some working decisions must be made. In this connection we may accept as constructive the suggestions of the superintendents consulted by Foster, which referred to training in (1) extra-curricular activities, especially of a social character, (2) vocational guidance,

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(3) the psychology of adolescence, individual differences, and personalized instruction (rather than mere subject teaching), (4) junior-high-school organization, (5) project teaching, (6) the socialized recitation, and (7) supervised study.¹

More comprehensive are the suggestions received from the analysis by Gaumnitz of the "characteristics" desired in junior-high-school teachers as set down by educators interested in the new organization. The following characteristics were found mentioned three times or oftener in a large body of literature dealing with the subject:²

1. Successful experience (22 times).
2. Special training for departmental teaching (21).
3. Interest in and understanding of adolescent child (12).
4. Subject-matter emphasis of high-school and professional-training emphasis of elementary-school teacher (11).
5. Ability to give educational and vocational guidance (9).
6. Extra-curricular training and social outlook (9).
7. Knowledge in vocational and industrial fields (8).
8. High scholarship and thorough efficient training (8).
9. Training and practice in supervising adolescents' study (7).
10. Broad human sympathies (7).
11. Adaptability and professional ambition and attitude (7).
12. A greater proportion of men than in elementary school or high school to give adolescent boys contact with masculine influence (6).
13. Understanding and appreciation of individual differences (6).
14. Practice-teaching experience in a junior high school (6).

¹ Herbert H. Foster, "Student Teaching and the Training of the Junior-High-School Teacher," *Educational Administration and Supervision* (September, 1922), Vol. VIII, p. 353.

² Walter H. Gaumnitz, "Provisions made by Colleges and Normal Schools to give a Special Type of Training to Teachers of Junior High Schools," *Educational Administration and Supervision* (November, 1925), Vol. XI, p. 569.

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15. Preparation more varied than that of high-school teachers, guarding against overspecialization in a single field (5).

16. Possession of the junior-high-school idea (4).

17. Ability in junior-high-school methods, for example, project and socialized recitation (4).

18. Generous inspiring personality (3).

Of these eighteen characteristics, all but the first, eighth, eleventh, twelfth, and eighteenth may be regarded as *trainable elements*, lending themselves to development by means of the curriculum. Even among the numbered exceptions, some, like the eighth, eleventh, and eighteenth, are susceptible to modification by the properly constituted curriculum. The following arrangement of elements of *content* in a curriculum will illustrate how most of these characteristics might be recognized :

1. *Liberalizing elements* recognizing the usual fields, except that the social and natural sciences (especially the biological, including general psychology) will be emphasized rather than foreign language and mathematics.

2. *Specialization* in fields represented in the junior-high-school program of studies (see Chapters VI and VII) directed toward departmentalized teaching. Candidates should be prepared in combinations of subjects rather than in a single narrow field.

3. *Such courses in education* as are regarded essential for all teachers, for example, introduction to education and educational psychology.

4. Special consideration of *secondary education and of the junior high school*, not excluding problems like guidance and allied activities. If not dealt with in other courses, general or special, the psychology of the junior-high-school pupil (or psychology of adolescence) and of individual differences should be recognized here.

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5. Courses in *general methods and in the special methods* in the candidate's fields of teaching specialization. The latter should not, however, be restricted to methods only, but should stress the content to be presented to junior-high-school children until such time as courses in professionalized content are developed.

6. *Observation and practice (or directed) teaching in bona-fide junior high schools*, and not merely in the upper grades of an eight-year elementary school. This phase of the work should include experience in the home-room plan and in supervising allied activities.

On the assumption that this outline contains the elements of a curriculum for pre-preparation of candidates for junior-high-school-teaching service, it is likewise deserving of consideration in mapping out in-service training for teachers already employed in junior high schools, whether these teachers are normal-school or college graduates. Those elements should be recognized first which have been most neglected in the conventional training programs.

An opportunity for smaller communities. It is too infrequently apprehended by those in charge of schools in small communities that junior-high-school reorganization may be effected in such a way as to bring about two distinct improvements over the older organization, both much to be desired. These are (1) a nearer approach to specialization of the teaching work, and (2) the securing of college graduates to teach the pupils in seventh and eighth grades, when ordinarily the highest training that can be secured is two years of normal-school training. It is this second advantage which prompts introduction of reference to this problem in conjunction with a discussion of the training of junior-high-school teachers.

By merging the seventh and eighth grades with the four-

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year high school and thereby establishing a six-year secondary school, it is possible to have a secondary-school staff as much larger than the former one as there are teachers of seventh and eighth grades, whether this is

Grades	Six-Year High School	Four-Year High School
7	English	
8		
9		Algebra
10		English
11		
12		Civics

FIG. 27. Illustration of the more specialized assignment of teaching work in the six-year than in the four-year high school in small communities. (Reproduced from Percival W. Hutson's "Training of the High-School Teachers of Minnesota" (*Bulletin of the University of Minnesota*, Educational Monograph No. 3 (1923), p. 29))

one, two, or more teachers. One of the discouraging aspects of the teaching work in small four-year high schools is its wide horizontal spread to many subjects for each teacher. By adding to the high-school staff in the manner suggested a greater extent of specialization will be permitted, as suggested in Fig. 27. In this illustration a teacher of English in a small four-year high school, in order to make up a teaching load of six periods per day,

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is obliged to teach all four years of English, and in addition algebra and civics. Those conversant with the small-high-school situation know that this kind of spread of teaching work is just as common as it is preposterous. In the six-year high school this teacher's load might be restricted to the field of English. Somewhat comparable improvements could be effected in other fields. Should the objection be raised that the task of teaching a school subject like English over a range of six grades is a difficult one, it may be answered that it is much less distressing than to undertake the horizontal spread over as many as two, three, or four different fields of instruction.

The proposal is *not* made here to use upper-grade teachers with a maximum of two years of normal-school work as high-school teachers. The plan suggested is one which should be anticipated and introduced at a time when college graduates approvable for the high-school grades can be substituted for those who have charge of seventh and eighth grades under the older plan. This leads to the achievement of the second advantage referred to, — having college graduates give instruction in seventh and eighth grades. In effecting the reorganization it would be imperative, of course, to consider the adaptability of all or almost all the high-school teachers to work on this lower level. To this end, since few training institutions have had regard for this type of need, such teachers would need to be selected with extraordinary precaution. In the present situation candidates who have had normal-school training and later have completed a college course should most nearly fit in with the plan. As the junior-high-school movement spreads more rapidly to smaller communities, our training institutions sending their product predominantly to such communities will come to adapt the training program to this type of service.

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A word should be said concerning those mistaken proposals which urge separate junior-high-school and senior-high-school teaching staffs for small communities. It is obvious that to restrict the vertical range of work in this way is only to spread the range horizontally, and even more widely than in the four-year high school. A partly separate faculty may be desirable, but this advantage would be offset by the disadvantage of defeating specialization. Comment should be made also on the criticism that a six-year school of this type does not include a junior high school. This is probably true, but there is no reason why it may not include a great deal of junior-high-school reorganization, as may be judged by the rapid canvass made in Chapter XV of the features which may be in whole or in part incorporated. There is, further, no reason why some little separation with respect to social interests cannot be effected between the groups of pupils enrolled in the two three-year periods.

SEX DISTRIBUTION AND SALARIES OF TEACHERS

The proportions of men and women teachers. Stayer's investigation of the status of teachers in junior high schools, from which data on extent of training have already been quoted, included also a study of the proportions of men and women teachers. He found the percentage of men in the staffs of two-year high schools to be 16 and of women 84. The percentages in three-year schools were only slightly different, being, respectively, 17 and 83.¹

From the inception of the junior-high-school movement there has been the advocacy of increasing, by means of it, the proportion of men teachers. Apparently this has

¹ Samuel B. Stayer, "The Status of Teachers in Junior High Schools," *School Review* (May, 1921), Vol. XXIX, p. 381.

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not been accomplished in any notable degree. In reporting his percentages, Stayer said, "The proportion of men in the junior high schools is small, being but slightly above that in the elementary schools and approximately one half of that in the high schools of the country." The argument for more men has in recent years been much less frequently based on an assumed superiority in teaching ability of men than on the desire to provide in the school, especially during early adolescence, the normalization of the social situation. Men and women make up adult society outside the school. The school is coeducational. Why should not the proportions of men and women in the schools be more nearly equalized? Doubtless several factors are at work to keep down the proportion, but the most important must be the salaries paid for the work. Desirable men will hardly be attracted in larger proportions unless salaries are larger. Meanwhile, in the long run better women than men can be secured at the salaries offered. The junior high school will employ some deserving men as teachers, but the turnover will be rapid as they are promoted to more remunerative positions.

The salaries of junior-high-school teachers. The salary situation just touched on may be described by the medians of the maximum annual salaries paid for junior-high-school teaching in systems of the country in 1924-1925. These are shown in Fig. 28 in comparison with medians for elementary-school and senior-high-school teachers and are seen to lie between the salaries for these two groups. In fact, they lie somewhat more closely to elementary-school than to senior-high-school salaries. As with salaries for these other groups, they advance from the smaller to the larger cities. But even in the largest cities, again as with the other groups, there is still ample room for improvement, in order to encourage professionalization of teaching work.

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The chief immediate concern on this score for the junior high school is not the unsatisfactory condition of salary schedules in teaching work generally, however important this may be. It has, instead, to do with the typical differences between maxima for junior and senior high schools.

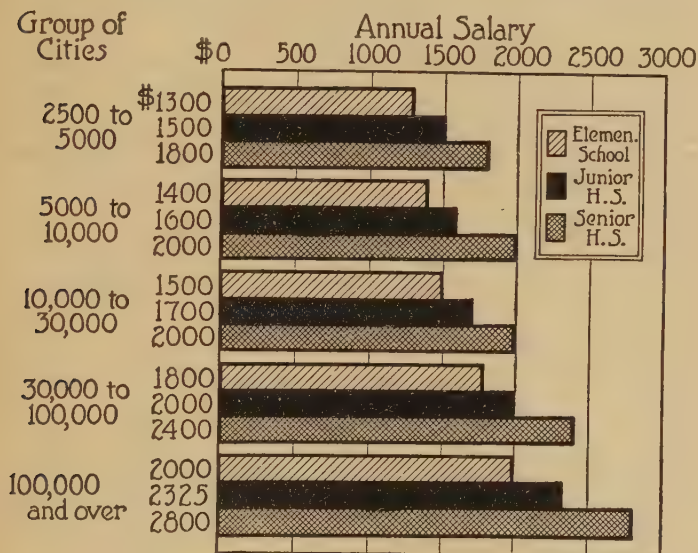


FIG. 28. Medians of the maximum salaries provided for elementary-school, junior-high-school, and senior-high-school teachers in cities of different population groups. (Based on materials presented in Tables 38-42 in *Research Bulletin* of the National Education Association (January and March, 1925), Vol. III, Nos. 1 and 2, pp. 53-56)

Differences as large as these are certain to operate to the disparagement of junior-high-school teaching in comparison with senior-high-school teaching. Work in the upper unit will be conceived as more remunerative and more honorific, and junior-high-school teachers will seek promotion to it, rather than remain in the junior high school

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to make the most of that institution. Those in authority in certain of our school systems have already realized the danger here, and have adjusted salary arrangements to offset it and to foster the recruiting of staffs adequate to the task. Examples are those systems in which there is either a single salary schedule for both junior-high-school and senior-high-school teachers or a single schedule for all teachers employed, irrespective of the grade level of the work, the salary for any teacher being dependent upon the extent of training, experience, and other qualifications. Referring again to the Berkeley situation by way of illustration, it is safe to say that the large proportion of highly trained teachers in the junior high schools there has been brought about for the most part by placing both junior and senior levels of teaching work on the same salary schedule.¹

THE PRINCIPAL AND OTHER OFFICERS

The importance of the junior-high-school principalship. With the junior high school an institution so largely on our educational frontier, so to speak, and with a teaching staff largely without extended specific preparation for its work, the position of the junior-high-school principal is indeed a vital one. Much depends upon the appointment of principals who are alert to all that is demanded of this new educational unit, who are equipped in the respects in which teachers are lacking, and who are capable of leading and directing their training during service. Principals of these parts working with compromise staffs of teachers will be able to bring the junior high schools to an estimable level of functioning.

As with salaries of junior-high-school teachers, the re-

¹ James T. Preston, Junior High Schools of Berkeley, California, *United States Bureau of Education Bulletin No. 4* (1923), p. 10,

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muneration of principals in these schools should be such as to attract and *retain* competent school heads. The median maximum salaries for junior-high-school principals for cities of the same population groups as listed in Fig. 28 were, in 1924-1925, respectively, \$1910, \$2000, \$2590, \$3500, and \$4000. Median maxima for senior-high-school principalships in the same groups of cities were, respectively, \$2400, \$3025, \$3500, \$4000, and \$4600.¹ There are rather marked differences in favor of the senior principalships. Since equal qualifications of the incumbents of junior-high-school and senior-high-school principalships and equal responsibilities may be assumed, effort should be directed toward placing these two principalships on the same salary basis.

Other officers. In all but small junior high schools additional officers have been provided, the number and the differentiation of their work being to some extent dependent on the enrollment. There is the assistant principal or vice principal or, sometimes, two of these officers, one being a man in charge of boys' interests and the other a woman in charge of girls' interests. If there is only one assistant principal, there may be a general supervisor of allied activities. Sometimes one or more educational and vocational advisers or counselors are provided, as well as other officers. Often the officers named devote only a part of their time to the special work, giving the rest of their time to teaching. The combinations of responsibilities in these additional officers are so various as to make it difficult to generalize concerning them. The responsibilities carried are nevertheless of much consequence in the junior high school.

¹ "Public School Salaries in 1924-1925," *Research Bulletin* of the National Education Association (January and March, 1925), Vol. III, Nos. 1 and 2, pp. 53-56.

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QUESTIONS AND PROBLEMS

1. Study the preparation of the staff of some junior high school as to (1) its extent and (2) special preparation for junior-high-school teaching.

2. Can you cite other examples than those mentioned in the chapter of a trend toward college graduates in recent appointees to junior-high-school teaching service?

3. Consider how each of the "trainable elements" in Gaumnitz's list of characteristics desired in junior-high-school teachers may be specifically provided for in the training program.

4. Suggest a list of topics for a series of fifteen biweekly junior-high-school teachers' meetings designed to give an understanding and appreciation of this new institution.

5. Make other suggestions for the in-service training of the teachers in a junior high school.

6. Plan for the schools in some small community the distribution of instructional work to the teaching staff in Grades VII-XII along the lines suggested in the discussion of this problem.

7. Indicate the size of the administrative staff required in a junior high school of a thousand pupils and assign the major duties of each officer.

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XIV

THE JUNIOR-HIGH-SCHOOL PLANT

THE BUILDING AND SITE

Importance to features and functions. It requires but a cursory canvass of the question of the relation of the material facilities of the junior high school to its other features to appreciate the importance of the former. Without adequate housing, site, and equipment it would be necessary to curtail the offering entering into the program of studies, there would be restrictions on the types of methods used, and the activities of the advisory system and social organization would be more or less limited. There is, moreover, as suggested under Features 11 and 12 in Fig. 18 (p. 131), no peculiar function the achievement of which is not accelerated directly or indirectly by an appropriate plant.

The problem of separate housing for the junior high school. Junior high schools are not universally housed in separate structures, that is, in buildings not also accommodating some other educational unit like the elementary school or senior high school. Terry reported that, for 94 junior high schools enrolling more than five hundred pupils, 76 schools, or about four fifths, housed the junior unit only, whereas for 55 schools enrolling less than this number of pupils, 25 schools, or less than half, housed the junior unit only.¹

Experience seems to recommend that, wherever possible,

¹ Paul W. Terry, "Providing Adequate Housing Accommodations for the Junior High School," *School Review* (January, 1924), Vol. XXXII, pp. 13-26.

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the junior high school be housed in buildings of its own and not be coöccupant with a senior high school or an elementary school, more especially the latter. This is not always feasible, particularly in the smaller communities. Separation assists in freeing the new institution from the restricting traditions of these other schools and thus gives latitude for a better recognition of the child's nature during the years of early adolescence. It permits a shift to a disciplinary régime more suitable for children of these years and, through the greater approach to homogeneity of the group included, better opportunity for other efforts at socialization.

It seems advisable to warn against a questionable practice that has arisen in connection with establishing junior high schools as coöccupants of buildings with elementary schools, — that is, providing them in *too large a proportion* of such schools in any city school system. Any tendency of this sort must keep the number of pupils in any one junior organization so small as to militate against providing for the recognition of individual differences through grouping by ability, for exploration and guidance, and for providing the beginnings of vocational education where this is deemed advisable. Performing these functions is facilitated by concentrating rather large numbers of children.

In structures being planned to house both junior-high-school and senior-high-school pupils, especially where there are large enrollments and where the coöccupancy is to be permanent, it is desirable to arrange the space provisions so as to make for some separation of the two units, placing those space provisions to be used in common between the parts of the buildings designed to serve the upper and lower divisions of the six-year period.

Space provisions in junior-high-school buildings. Terry reported, as the major feature of the study already re-

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TABLE XXXVIII. KINDS OF FLOOR SPACE PROVIDED IN MORE THAN 50 PER CENT OF THE LARGER BUILDINGS ORIGINALLY DESIGNED FOR JUNIOR HIGH SCHOOLS¹

KINDS OF FLOOR SPACE	PERCENTAGE OF BUILDINGS	KINDS OF FLOOR SPACE	PERCENTAGE OF BUILDINGS
General		16. Gymnasium lockers for girls	62
1. Class or recitation room	100	17. Gymnasium for both boys and girls . . .	60
2. Principal's office	100	Domestic science	
3. Auditorium	96	18. Cooking room for home economics	98
4. Stage in auditorium	92	19. Sewing room for home economics	98
5. Rest room for women teachers	92	20. Dining room for home economics	87
6. Library	79	21. Supply room for home economics	63
7. Textbook stack room	65	Science	
8. Reception room	63	22. Separate general-science laboratory	77
Industrial arts		Fine arts	
9. Manual-training shop	79	23. Free-hand-drawing room	71
10. Mechanical-drawing room	69	24. Music room	67
11. Separate woodworking shop	65	Lunch room	
Physical education		25. Cafeteria	65
12. Showers for boys	90		
13. Showers for girls	87		
14. Physical director's room	71		
15. Gymnasium lockers for boys	67		

ferred to, the percentages of junior-high-school buildings in which certain kinds of space provisions had been made. For this purpose the buildings were considered in three groups: (1) those originally *designed* to be used as junior high schools and housing schools enrolling more than five

¹ Paul W. Terry, "Providing Adequate Housing Accommodations for the Junior High School," *School Review* (January, 1924), Vol. XXXII, p. 23, Table III.

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hundred pupils ; (2) *remodeled* buildings housing schools of the same size ; and (3) buildings housing schools enrolling less than five hundred pupils. As the findings for the first of these groups are the most suggestive for the purpose in hand, to give an impression of better buildings percentages for this group only will be directly reported. Those space provisions only which appeared in more than half of the group are listed in Table XXXVIII. This table does not include forty-four other space provisions appearing in less than half of this group of plans. Among these are the following :

General

- Rest room for men teachers, 42 per cent
- Study hall, 33 per cent
- Stack room for library, 27 per cent

Industrial arts

- Separate sheet-metal shop, 46 per cent
- Printing shop, 46 per cent
- Tool room for manual training, 46 per cent
- Separate finishing room, 27 per cent

Physical education

- General lockers for boys, 40 per cent
- General lockers for girls, 40 per cent
- Rest room for girls, 38 per cent
- Separate gymnasium for girls, 29 per cent
- Separate gymnasium for boys, 27 per cent

Domestic science

- Separate fitting room, 44 per cent
- Bedroom for home economics, 40 per cent
- Laundry for home economics, 33 per cent

Science

- Apparatus-storage room, 37 per cent
- Separate geography laboratory, 23 per cent

Fine arts

- Separate art-exhibit room, 15 per cent

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Commercial

Typewriting room, 48 per cent

Bookkeeping room, 44 per cent

Stenography and typewriting room, 33 per cent

Lunch room

Teachers' lunch room, 29 per cent

A comparison was also made of the percentages reported with those found for the other two groups of buildings. The smaller schools could not be expected to provide the range of work or differentiation of rooms practicable in large schools. The situation in the remodeled schools may be inferred from the following:¹

The data . . . presented . . . prove conclusively that junior high schools housed in buildings originally designed for that purpose have at their disposal a far more adequate range of specialized space provisions than schools housed in remodeled structures. The facts . . . suggest that a city tends to curtail the educational program of the junior high school to a marked extent when it decides to house the new institution in a remodeled building. Limited educational advantages and remodeled buildings seem to go together.

Illustrative floor plans. It should assist somewhat to a proper appreciation of the nature and variety of these space provisions in a modern junior-high-school building to examine the floor plans of two such structures. The first set of plans, one of three floors (Figs. 29, 30, and 31), is that of the Carlos M. Cole Junior High School in Denver. Among the provisions other than regular classrooms on the first floor of this building are the principal's suite, office of the dean of girls, girls' social room, girls' rest room, boys' rest room, clinic and examining rooms, science rooms,

¹ Paul W. Terry, "Providing Adequate Housing Accommodations for the Junior High School," *School Review* (January, 1924), Vol. XXXII, p. 23, Table III.

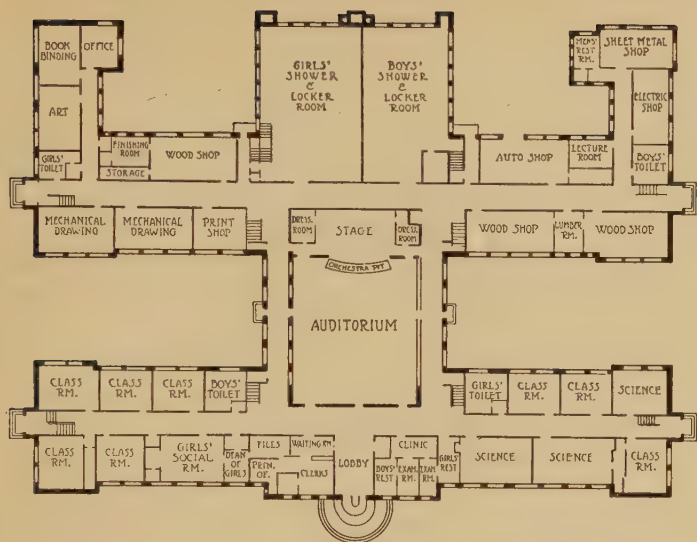


FIG. 29. First-floor plan, Carlos M. Cole Junior High School, Denver

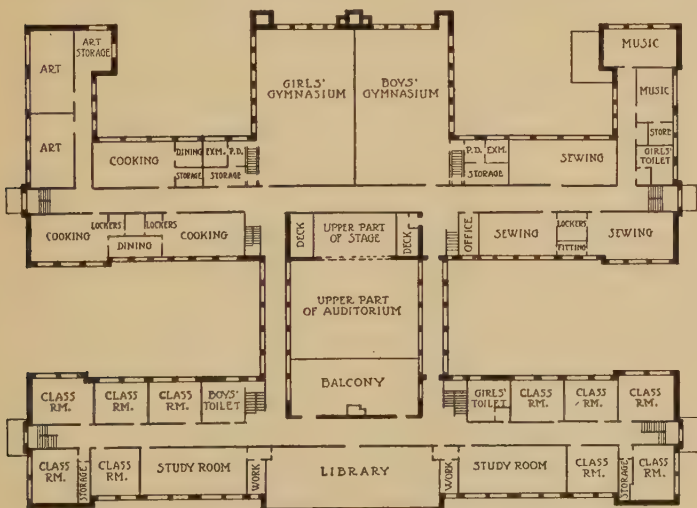


FIG. 30. Second-floor plan, Carlos M. Cole Junior High School, Denver

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auditorium with stage and dressing rooms, wood shops, finishing room, print shop, mechanical-drawing rooms, art room, bookbinding room, sheet-metal shop, electric shop, automobile shop, and locker rooms for boys and for girls. On the second floor are the large library room opening

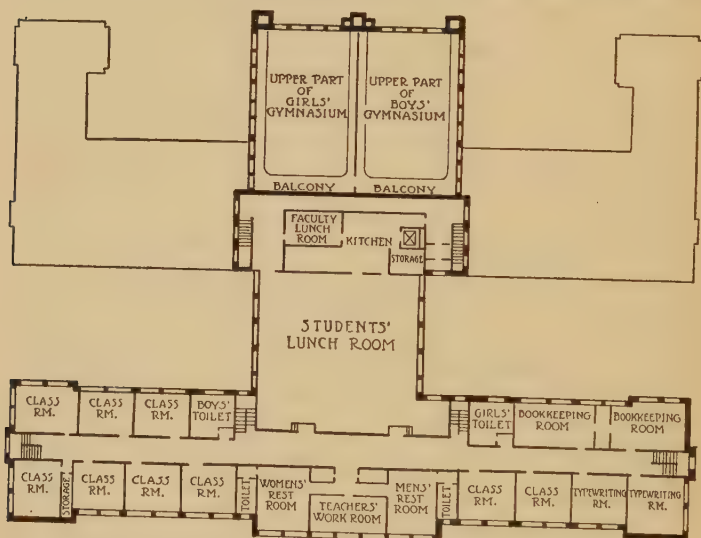


FIG. 31. Third-floor plan, Carlos M. Cole Junior High School, Denver

conveniently into study rooms at either end, the different rooms for home economics, music rooms, and separate gymnasiums for boys and girls, with rooms also for the physical directors. Besides classrooms the third floor provides rest rooms for men and women teachers, a teachers' workroom, typewriting and bookkeeping rooms, and separate student and faculty lunch rooms with kitchen. The adaptability of the space provisions to be found in these plans to a generously conceived junior-high-school education is unquestionable.

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The second set of plans, one of two floors, is that of a junior high school in a smaller city, the Roosevelt Junior High School in Appleton, Wisconsin. The variety of space provisions is, in consequence of the size of the school, not

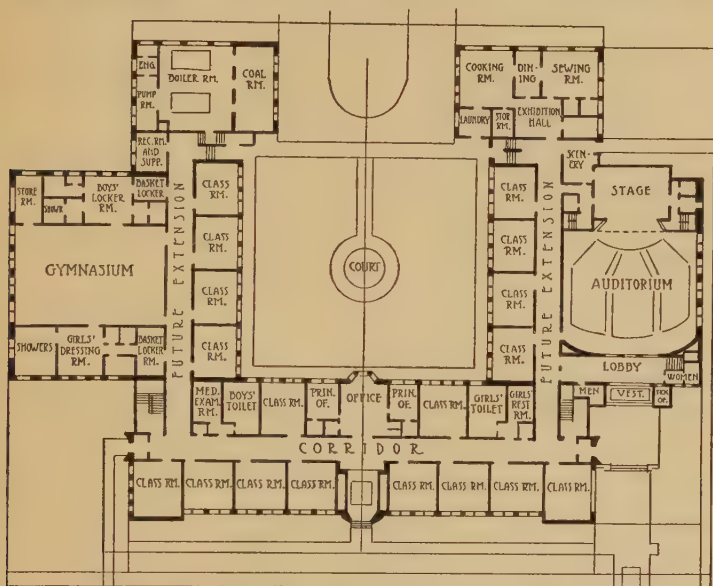


FIG. 32. First-floor plan, Roosevelt Junior High School, Appleton, Wisconsin

so great as for the Cole Junior High School but is, nevertheless, adapted to an enriched program. Among rooms other than classrooms on the first floor are the principal's suite, medical examiner's room, girls' rest room, common gymnasium for boys and girls (with necessary locker rooms, showers, and dressing rooms), the home-economics suite, and the auditorium with stage and dressing rooms. On the second floor are the library, wood shop, and metal shop.

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It should be noted that in the second plan the gymnasium and auditorium are exterior features of the building and are not, as in many plans, in the central portions of the structure with classrooms surrounding them. The architect makes much of the advantages of this arrangement,

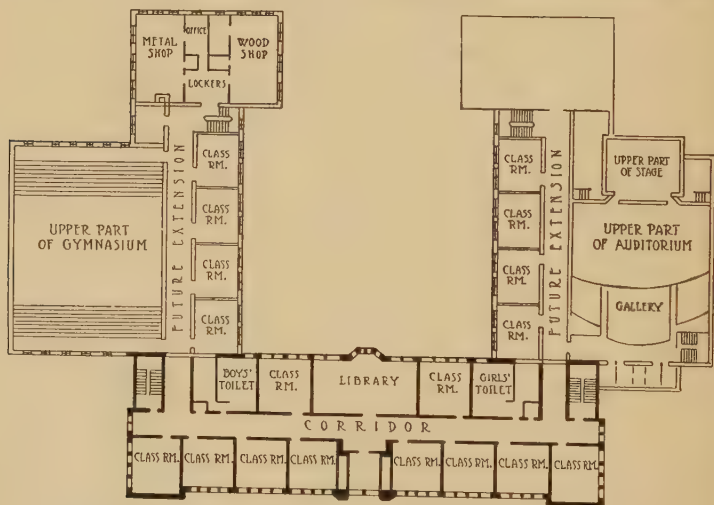


FIG. 33. Second-floor plan, Roosevelt Junior High School,
Appleton, Wisconsin

some of the points stressed being that pupils are not obliged "to walk around these rooms of only occasional use in going to and from their classes"; the buildings can be more readily enlarged as the need arises; the auditorium is "accessible both from the school and from the street, becoming a thing of public concern"; "the gymnasium is next to the playground of which it is a part,"¹ thus facilitating movement of pupils from one to the other.

¹ William K. Fellows, "Building Plans for the Junior High School," *School Review* (January, 1925), Vol. XXXIII, pp. 35-40.

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The plan of grounds. The plan of the grounds of one junior high school, the David Worth Dennis Junior High School of Richmond, Indiana, is also reproduced (see Fig. 34) in order to suggest the desirability of providing

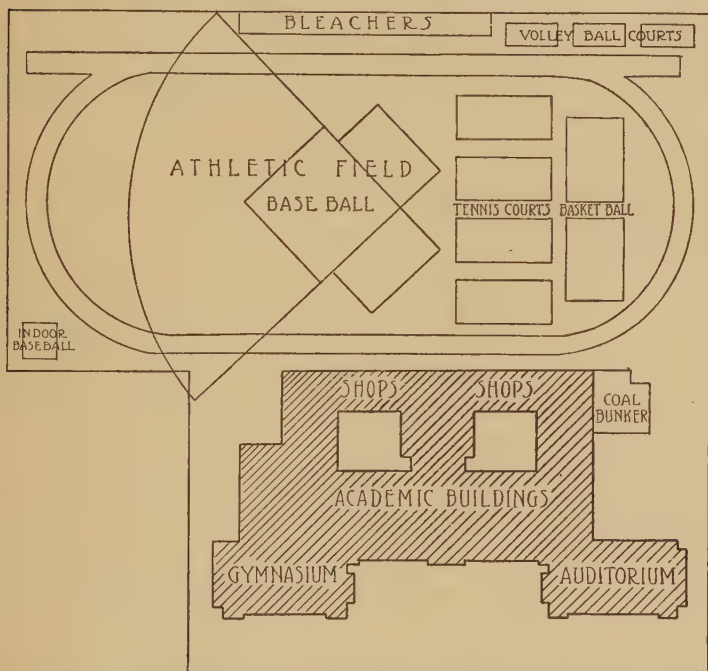


FIG. 34. Plan of grounds, David Worth Dennis Junior High School, Richmond, Indiana

ample space for the outdoor play and games stressed in Chapter VII as being essential in the program of physical education in these grades. Modern ideals for physical education commend the use of such facilities during suitable weather in preference to use solely of the indoor gymnasium.

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The library and the junior high school. It seems impracticable to include within the scope of a book of this nature a treatment of the many kinds of special equipment required in the modern junior high school, such as that needed in laboratories, shops, special-subject classrooms, in gymnasium and on playground, etc. It is even out of the question to deal with most of the kinds of general equipment needed. There is one type of equipment so ramifying in its possibilities and simultaneously so much at one with the genius of the reorganized school, that some brief consideration is desirable. The possibility of enlarging the scope of education of youth in these years through adequate library service matches the need of accomplishing the enlargement so fitly as to warrant vigorous effort at providing the facilities and pressing them into use. The expanded program of studies, the enrichment of content within the subjects, and the improved methods of teaching, — all of which demand excursions beyond the confines of the textbook, — the opportunities of exploration in wide variety, the adaptation of the program to differences in ability and interests, the establishment of habits of wholesome recreational reading, and the varied reading needs in certain of the allied activities are some of the modifications brought by the new school which call for a much augmented library situation and service as compared with what is provided in the corresponding grades of the older school.

The physical facilities required. Some of the facilities desirable may be briefly described. Most of these are to be found in or are suggested by Fig. 35, which depicts the floor plan of the library in the McKinley Junior High School of Los Angeles.¹ The library room should be large

¹ Alice B. Struthers, "The School Library," *American School Board Journal* (December, 1925), Vol. LXXI, pp. 45-46.

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enough to seat at one time up to 10 per cent of the enrollment of the school, allowing sixteen square feet for each individual. There should also be a workroom for the librarian. In the reading room should be reading tables

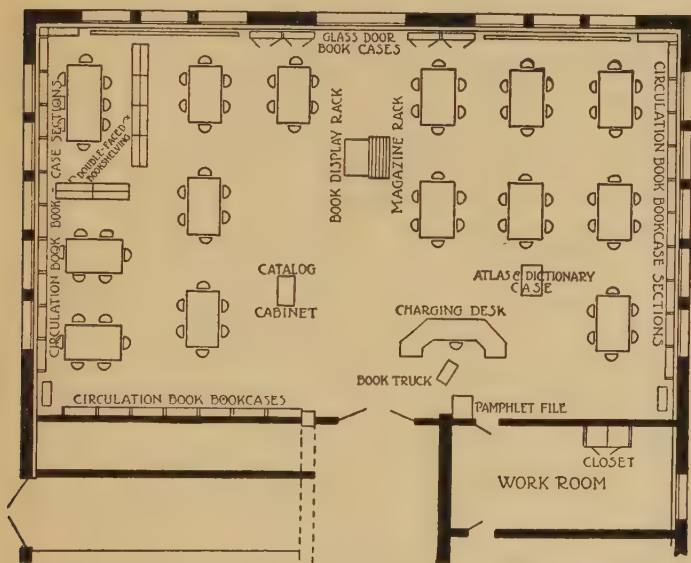


FIG. 35. Floor plan of library in McKinley Junior High School, Los Angeles

three by five feet, with six low and substantial chairs without arms at each; open shelving for books against the walls; atlas and dictionary case; magazine and book-display racks; card catalogue with cabinet for same; pamphlet file; charging desk; table; book truck. There should also be a clock and a bulletin board. Decorations should assist in making the reading room one of the most attractive rooms in the school. The plan here reproduced includes also some double-faced shelving sectioning off a rectangle of space

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containing a larger table at which pupils working on special problems might be seated. Some librarians regard such a feature as objectionable on the ground that it offers opportunity for the emergence of needless disciplinary problems. The most important material equipment of the library, to be sure, is the books, the basis of selection being *use*. The two main kinds of use are in connection with courses and for voluntary reading. Great care must be exercised in selecting books that will best serve these needs.

Enlarging the usefulness of the library. A proper equipment, however, no more constitutes an adequate library than do mere building and equipment, no matter how well appointed, constitute a junior high school. It must first be placed on an efficient working basis. Notwithstanding the fact that this chapter is concerned with material aspects, a word may be said as to how this working basis can best be established. Most important here, of course, is the librarian. Miss Struthers has described her as follows:¹

The librarian is the controlling factor and the guiding force of the library. In addition to the clerical and technical work connected with the handling of the books, the librarian has a great educational work. She should be ready to guide and direct the reference work of the various pupils and to assist teachers in making their reference lists. She should give library instruction to all the pupils in the school and should plan to put into operation definite library courses. She should know more than *books*. She should delight in the companionship of the developing adolescent. She should radiate the spirit of helpful service and a desire to coöperate and to discover the interests of pupils and to direct their reading.

A librarian of this type can accomplish a great deal single-handed, but much more with coöperation. This

¹ Alice B. Struthers, "The School Library," *American School Board Journal* (December, 1925), Vol. LXXI, p. 45.

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should come from several sources. The teachers can do much by the attitudes they take in making assignments, in preparing reading lists, outlining projects, and in many other ways. The enthusiastic coöperation of pupils, too, can be enlisted. The school head also has his responsibilities in this problem, such as in encouraging teachers and pupils to coöperate, adjusting the schedule so as to facilitate use of the library, and seeing that there is necessary recognition in the budget of the library's material requirements. Through such universal coöperation the library should come to take the significant place in the lives of junior-high-school pupils outlined for it above.

QUESTIONS AND PROBLEMS

1. How do the space provisions as reported in Table XXXVIII differ from those in modern structures for four-year or senior high schools?

2. Check the space provisions in the Cole Junior High School in Denver and the Roosevelt Junior High School in Appleton, Wisconsin, against the list of kinds of space provision in Table XXXVIII.

3. Discuss the need of a site of at least ten acres for a junior high school of a thousand pupils.

4. Plan the special equipment necessary in some junior-high-school subject of study.

5. Plan the library facilities for a junior high school of four hundred pupils.

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XV

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OBSTACLES TO STANDARDIZATION

The ineptitude of the typical as the standard. There has been some tendency in the educational world in recent years to accept the *typical* as the *standard*. Although such a practice will often have something to commend it, there are occasions on which it is indefensible. A notable instance of the ineptitude of this practice would be the acceptance of the typical junior high school as the standard of reorganization.

Described in terms of the features of reorganization, this typical junior high school distributes work to teachers departmentally or semidepartmentally and promotes by subject. As to these two features, it conforms fairly well to desirable practices. On the other hand, the typical junior high school too often wavers between the two-year and three-year organization; it still adheres to the requirement for admission to the seventh grade of "satisfactory completion of all the sixth-grade work"; its program of studies deviates too infrequently from the better offering in the same grades of the conventional organization; it has often hesitated to classify pupils more homogeneously; it has not given a sufficiently important place to innovations in teaching method, restricting itself all too often to the "examination" method of recitation; its advisory system is with only occasional exceptions confined to the discharge of the disciplinary responsibilities of the home-

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room teacher; its social organization is often restricted to a relatively small number of unsystematically sponsored and educationally ineffective allied activities; its staff is often made up in very large part of upper-grade teachers not especially selected for their promise in a new field of work requiring adaptability and an active capacity for growth; and, finally, it is too often coöccupant with an elementary school in an unremodeled and poorly equipped building. Inspiring deviations from the norm of tradition are, of course, to be found, but the bulk of junior high schools have been too conservative to warrant using them as a criterion of practice.

State control as a possible source of standards. Nor do state laws and other methods of state regulation appear to afford a source of constructive criteria from which might be set up a norm of desirable practice. Powers has reported a canvass of the extent of state control¹ the findings of which he grouped under two main divisions, (1) the legal provisions and (2) the requirements and recommendations of state departments of education. He found that twenty-five different states had enacted legislation pertaining to junior-high-school reorganization. This legislation ran along a number of lines. There were laws definitely relating to junior high schools and permitting their organization (25 states); providing for recognition or approval by the state department of education (20 states); recognizing the division between elementary education and secondary education at the beginning of the seventh grade (19 states); defining the grades to be included (14 states); recognizing the junior high school as an integral part of the school system and defining the junior high school (13

¹ J. Orin Powers, "Legal Provisions and Regulations of State Departments of Education affecting Junior High Schools," *School Review* (April, 1925), Vol. XXXIII, pp. 280-291.

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states); making special provisions regarding state aid for junior high schools (8 states); providing for payment of tuition of nonresident seventh-grade and eighth-grade pupils (8 states); making special provisions for the certification of junior-high-school teachers (6 states); prescribing a minimum enrollment for recognition or approval (3 states); prescribing subjects that must be included in the curriculum (2 states). Powers's generalization is that the recognition of junior high schools in the laws is permissive rather than mandatory and that the laws "lag behind rather than set the standards for reorganization." He believes also that state departments of education and their chief executive officers are in a position to influence notably the development of the junior high school.

Turning to the regulations set up by state authorities in nineteen states, Powers summarizes them under the following heads: requirements for admission, years included in the junior high school, departmentalization, promotions, teachers' qualifications, and the program of studies. One gathers from his treatment that the "regulations" are less constructive than the "recommendations," which have not, like the regulations, the force of law. He concludes that his findings "indicate that state departments of education have made an entry into this field which may be expected to result in crystallizing and stabilizing the better features of the junior-high-school movement."¹ His data make it all too apparent, however, that the latter conditions obtain in few if any of our state school systems. Although these state formulations do not often operate as obstacles, we shall be obliged to wait for some years before they may be regarded as a suitable source of such criteria.

¹ J. Orin Powers, "Legal Provisions and Regulations of State Departments of Education affecting Junior High Schools," *School Review* (April, 1925), Vol. XXXIII, p. 291.

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Reorganization in smaller communities as a hindrance to standardization. A significant factor in the difficulty of arriving at a definition or concept of a standard junior high school is the problem of reorganization in our many smaller communities. If our standard-setting could be done in relation to schools of not less than five or six hundred pupils, the task would be much less difficult ; but when schools with smaller enrollments, small teaching staffs, restricted opportunities for curriculum expansion, and meager facilities used in conjunction with elementary-school or senior-high-school grades or both are represented, real obstacles are encountered. Perhaps the way out is the differentiation of standards for schools and communities of different sizes.

It is worth emphasizing here that much of reorganization may be introduced in the schools of many villages and smaller cities. This becomes apparent from even a brief consideration of the features of the junior high schools. (1) There seems no special obstruction in nonurban territory to incorporating that feature which pertains to the *three-year period*, except in states which have encouraged partial (for high-school purposes only) rather than complete consolidation. The problem of separating this unit from grades below was touched upon in an earlier chapter (XIII, p. 461), while discussing the problem of securing better-trained teachers for the seventh and eighth grades in smaller communities. It comes up again below in referring to the social organization. (2) On account of the small numbers of pupils involved, the small school cannot as readily adapt the program to irregular pupils, and it is therefore more difficult than in the larger school to modify *admission requirements* to the seventh grade. There is, however, the compensating condition of smaller class enrollments, which allow for more attention to the individ-

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ual pupil. (3) The large constant element (usually well over half) of junior-high-school *programs of studies* is an encouragement of reorganization in smaller communities. The enrichment and redistribution of work in the constant subjects must and can in large part be achieved for all children, no matter where they are in attendance. It is chiefly in the range of subjects to be made available in the variable or elective portions of the program that the smaller community is handicapped. Work to fill out the pupil's daily schedule is being, and must continue to be, provided under present conditions. It is impossible, therefore, to understand why the balance of the day's work beyond that usually apportioned to the constants cannot be of a type suited to junior-high-school purposes, even though not so generously as may be desired. (4) *Grouping by ability* is often out of the question, but may be compensated for under (2). (5) The extent of *departmentalization* of instruction hinges directly on the number of teachers employed. The statement will now not often be gainsaid that wherever there are as many as two teachers for three or more grades beginning with the seventh, some measure of specialization of teaching work can and should be provided for. (6) There can be no serious impediment in these communities to modifying somewhat the conventional basis of *promotion* from grade to grade to that which is more largely by subject. (7) It is difficult to see how the improved *methods of teaching* increasingly found in junior-high-school grades should be distinctive of urban communities: they are imperative and feasible in all schools. (8) The *advisory system* in reorganizations for smaller enrollments can be simpler than for larger ones. For one thing, in the smallest units there need be no home rooms in the same sense as these are provided in urban junior high schools. Although the range of curricular con-

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tacts must be more restricted, it does not appear that a reasonably effective plan of guidance cannot be instituted. (9) Wherever pupils of these school grades can in some respects be separated from those above or below, it is possible to develop a homogeneous *social organization* that can be put to educative uses. This development can be conducted to if separate group rooms for the two three-year divisions are provided, although in six-year schools some life and interests in common are desirable. (10) The *teaching staff* and (11) *plant* may also be provided to conform in no small part to junior-high-school needs. There appears not to be a single feature of the junior high school, unless it is ability grouping, which may not in some part be provided for in the smaller population groups.

By far the most thoroughgoing canvass of the problems of the junior high school in smaller communities is one reported by Spaulding.¹ He made an intensive study, involving personal visitation, with respect to a number of "difficulties," of small junior high schools in Massachusetts. These difficulties ranged through the classification of pupils, the offering of electives, the provision of extra-curricular activities, the size of the teaching staff, the qualifications of teachers, supervision, and housing and equipment. Although it appears that these schools operate under serious handicaps, one leaves the perusal of the report with the assurance that a good deal of junior-high-school reorganization is achievable in the small community, and that much more is achievable than has been achieved in small school systems purporting to be reorganized on this basis.

But even when it is admitted that much of junior-high-school reorganization is adaptable to smaller systems, it is

¹ Francis T. Spaulding, *The Small Junior High School: A Study of its Possibilities and Limitations*, Harvard Studies in Education, Vol. IX (1927).

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sometimes argued that, if significant modifications are made in the seventh and eighth grades, the work of the ninth grade is not well adapted to nonresident pupils entering the school after completing eight years of elementary-school work in their home districts, usually in one-room schools. If this group is not large enough to be separately cared for until they are aligned with those who have pursued the modified curriculum, their special needs must be cared for in some other way, such as individual instruction for a part of the time. *Vigorous effort should be made to prevent the needs of this smaller group from interfering with the best progress of the larger group of resident pupils.* The enlarged opportunities of the reorganized school and the disadvantages of transfer at the ninth grade should in time induce the parents of nonresidents to arrange for earlier transfer. It should also serve to hasten somewhat the achievement of consolidation that will assist in distributing junior-high-school advantages to larger proportions of the rural population.

Reverting to the problem of standardization from which we have for the moment digressed, it should be said that there are those who would contend that the lower three-year period of the six-year high school in such smaller communities is *not* a junior high school, and that to deserve to be so designated these should be separately housed, or at least separately administered. There are friends of this type of organization who are disposed to take the opposite view. The present writer has no great interest in such a controversy, since it is not so much the appropriation of the *name* as it is the *incorporation of the features and the performance of the functions* which counts in reorganization. To the extent that the view stated above, concerning the feasibility of incorporating many of the features in the schools with smaller enrollments, is acceptable, to that

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extent is *junior-high-school reorganization* practicable, no matter what manner of designation is applied. It would hasten the work of evolving standards if we could early ascertain just how far it is practicable to carry out reorganization in schools of different sizes, so that the differentiated standards already referred to might be the more rapidly established.

Variation in practice and opinion as a deterrent to standardization. It should be apparent by implication from the preceding portions of this chapter that our difficulty in arriving at acceptable standards for the junior high school is intimately related to the wide variation in practice in and opinion concerning junior high schools. In an important sense these are different ways of working or looking at the same problem. If we had a consensus of practice and opinion we should have the standards, or at least the materials of which to make them.

This variation is made very apparent in the efforts of a committee of the North Central Association of Colleges and Secondary Schools working under the chairmanship of Edmonson.¹ In carrying on its activities this committee accepted the following definition of the junior high school:

A Junior High School is a school in which the seventh, eighth, and ninth grades are segregated in a building, or portion of a building, by themselves, possessing an organization and administration of their own that is distinct from the grades above and grades below, and are taught by a separate corps of teachers.

This definition, Edmonson reports, was vigorously attacked. A similar fate was that of certain "tentative standards" proposed by the committee covering such mat-

¹ J. B. Edmonson, "Some Tentative Standards for Junior High Schools, with Criticisms," *American School Board Journal* (February, 1921), Vol. LXII, pp. 33-34.

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ters as preparation of teachers, the teaching load, program of studies, salary schedule, and building and equipment. Moreover, the proportion of schools that could qualify on these standards was discouragingly small. Edmonson ends his recital of the committee's experiences with the following comment significant for our problem of standardization:¹

One general conclusion reached by the committee was that the junior-high-school movement is too new to make standardization possible or desirable. The newness of the movements is emphasized by the fact that only 53 schools of the many so-called junior high schools were eligible under the official definition adopted by the North Central Association. It is further emphasized by the fact that of the 53 eligible under this definition only four were organized prior to 1914. While newness makes desirable a very careful study of possible standards, it also makes imperative a very cautious procedure in the adoption of standards. Unless this caution is used there is grave danger of hindering the movement. . . .

Lack of knowledge still a fundamental obstacle. Back of the hindrances that have so far been reviewed must lie our lack of knowledge of what is involved in the junior-high-school movement. From this point of view we are not yet in a position to define the standard junior high school: we are still too remote from finalities in conceptions of both functions and features to speak with large assurance of what should be. Before we may attain these conceptions there must be a vast deal of experience and experimentation. For genuine guidance in standardization we must settle down, even more than we have, to the laborious working out, detail by detail, of special purposes of the junior high school and the means by which these purposes

¹ J. B. Edmonson, "Some Tentative Standards for Junior High Schools, with Criticisms," *American School Board Journal* (February, 1921), Vol. LXII, p. 34.

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are to be accomplished. For instance, our knowledge of the nature of the child during his years of attendance in these grades is still meager and must be much extended before we may, with any degree of ultimateness, define what is meant by recognizing it in the school régime. Likewise, we have much to learn concerning individual differences and what is involved in their recognition. We are relatively uninformed on the remaining functions to which we have given attention in earlier chapters, and on the need of their performance. It is conceivable that there are valid purposes of which we are as yet unaware. The same may be said of the dearth of exact information on each feature of reorganization, for example, the curricular materials and their mode of administration, the methods of teaching, the advisory system, the staff, etc. As is the case with all our educational institutions, but even more with the new than the old, most of what we need to know still remains undisclosed and it is the responsibility of all who are in any way connected with the junior high school to assist experientially and experimentally in extending our information concerning its distinctive aims and the special agencies for their attainment.

THE BASIS OF A TENTATIVE STANDARD

The function-feature relationship once more and finally. But the lack of full knowledge gained by the methods of science has not prevented standardization of the older educational institutions. In the light of such information as has been available, standardization has proceeded and no small portion of our educational progress is to be ascribed to it. Similarly, it is necessary to utilize such knowledge as we have in attempting to formulate a tentative conception of the standard junior high school, this

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conception to be modified as exact information is added for our guidance. Such a tentative standard is suggested by a cursory examination of Fig. 18, to which reference has been frequently made since its first presentation in this book. Although the criteria are not put in readily intelligible quantitative terms; there is at hand, in the function-feature relationship depicted, at least a qualitative test of every junior-high-school practice. In this relationship is the heart of the junior-high-school idea.

The tentatively standard junior high school. As has been seen in an earlier portion of this book, the functioning of the junior high school seems to be best facilitated by the inclusion of the three grades beginning with the seventh, and by a plan of admission somewhat at variance with insistence upon satisfactory completion of all the work of the preceding grade. The program of studies should be of the constants-with-variables or combination type, and not of the single-curriculum or pure multiple-curriculum type. It should in its constants provide the training necessary for all pupils in achieving the health, civic-social-moral, and recreational aims, and in its variables it should give latitude for the individual choice which is possible and advisable in achieving the exploratory function, for a small proportion of pupils the recognition of the vocational aim, and for all pupils, in some part, the recreational aim. Both constants and variables should be administered as far as possible to recognize differences in ability. Some measure of departmentalization is desirable, although complete departmentalization, if provided, should be deferred until pupils have been prepared for it by partial departmentalization. Some plan of flexible promotion should be followed. The work of the classroom should not be restricted to the conventional "recitation" method, but should give generous place to acceptable innovations.

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There should be an advisory system, which will, of course, be concerned with the school behavior of the child, but should in addition comprehend at least his curriculum and his vocational and social-moral concerns. His interest in allied activities should be put to use to his educational advantage. The staff in this standard junior high school should be selected in the light of its vital relationship to other features of reorganization and with a view to securing teachers who are capable and desirous of growth and who, when not already adequately prepared for the work, may be trained to an appreciation of the purposes of this new institution. In the present stage of junior-high-school teacher-training, it is too much to expect most — or even many — of them, when first appointed to apprehend those purposes. Finally, the housing and equipment should be such as to facilitate rather than obstruct the performance of the functions, and to allow for a wide range of educational activity. The relationship of each of these features to the possibility of full accomplishment of the working list of distinctive purposes is so direct and intimate that if any one be ignored, the realization of the purposes is endangered to such an extent that it may be doubted whether this tentatively standard junior high school may be attained.

QUESTIONS AND PROBLEMS

1. Account for the conservative character of efforts at state regulation of junior high schools.

2. How would the maintenance of different types of school organization in rural and urban territory — that is, the 8-4 plan in the former, and the 6-3-3 in the latter — interfere with the ready transfer of pupils from one to the other?

3. Is variation in junior-high-school practices likely to decrease with experience with the movement?

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4. Apply to one or more of the descriptions of junior-high-school situations in the second group of references below the criteria developed in this book and represented in the function-feature relationship.

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